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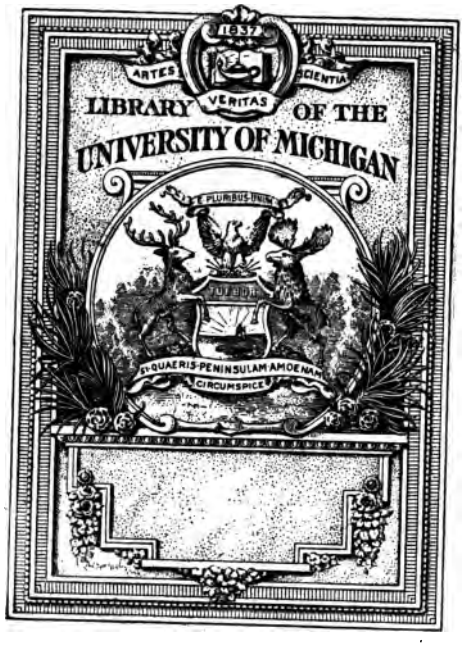
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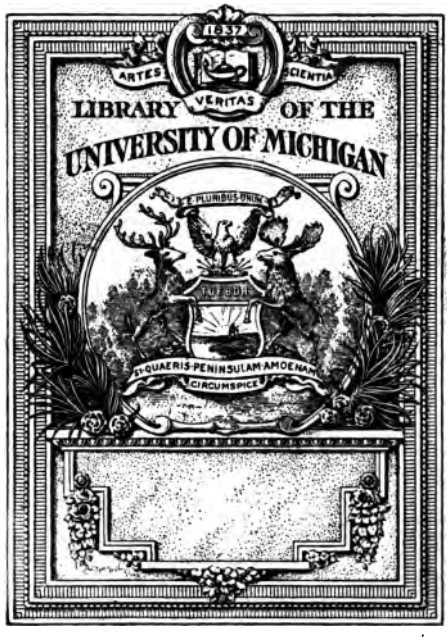
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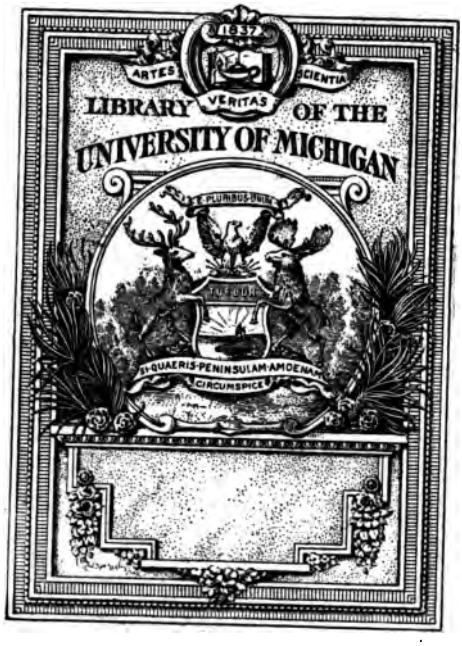
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(SCIENCE.)

Vol. III, No. 1.

SOME FUNGI FROM ALABAMA

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THE PREVIOUS BULLETINS OF THIS SERIES ARE:

VOLUME I.

No. 1.—Preliminary report of the Morgan Expedition, 1870-71.—Report of a reconnoisance of the Lower Tapajos. C. F. HARTT. (*Out of print.*)

No. 2.—On the carboniferous Brachiopoda of Itaitúba, Rio Tapajos, Prov. Pará, Brazil. 1874. O. A. DERBY. (*Out of print.*)

VOLUME II.

The Cayuga Flora. Part I: A Catalogue of the Phaenogamia growing without cultivation in the Cayuga Lake Basin. 1886. By WILLIAM R. DUDLEY.

SOME FUNGI FROM ALABAMA.

COLLECTED CHIEFLY DURING THE YEARS 1889–92.

During the connection of the writer with the Alabama Polytechnic Institute and Agricultural and Mechanical College, at Auburn, some attention was given to the collection and study of the fungi of the State. The majority of the collections were made at Auburn, and while no special explorations were made to other parts of the State collections were made at several places when it was found necessary to visit certain points in connection with the special investigations of the diseases of the cotton plant. Since severing my relations with the Institution it has been my intention to publish a report on the collection in the form of a list of the well known forms with notes on the little known species and descriptions of those which seemed to be undescribed. The work has been delayed for several years because of the difficulty of finding sufficient time for critical study of the material while busied with other work. The number of species here reported must represent but a small number of the species of the State, and yet considering the limited time at my disposal for the work of collections the number is quite large, and the greater majority of these were collected during one year. During the year 1891–92 Mr. B. M. Duggar who was then tutor in my department collected many specimens, and others were collected by Mr. C. L. Newman and others. In all cases where no name of collector is given after a specimen it will be understood that the specimen was collected by myself. Credit is given to the other collectors by placing their name in parenthesis following date and habitat of the specimen.

From time to time short papers have appeared in the Botanical Gazette, Bulletin of the Torrey Botanical Club, and the Journal of the Elisha Mitchell Scientific Society, describing species and genera which had been examined critically at the time; while more extended accounts of the life history of a few of the more important of the parasitic forms especially those affecting the cotton plant were published in several of the Bulletins from the Alabama Experiment Station, in the Journal of Mycology and in Bulletin 33 of the United States Department of Agriculture, Office of the Experiment Stations.

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The list of these papers is as follows.—

Some Erysipheae from Carolina and Alabama. Jour. Elisha Mitchell Sci. Soc. VII, 1–14, 1891.

A new Ramularia on Cotton. Bot. Gaz. XV, 166–168, 1890.

A new Ravenelia from Alabama. Bot. Gaz. XVI, 313–314, 1891.

On the structure and dimorphism of Hypocrea tuberiformis. Bot. Gaz. XVI, 281–284, 1891.

Fig Rust. Agric. Jour. Montgomery, Apr. 1891.

Black Rust of Cotton; a preliminary note. Bot. Gaz. XVI, 61–65, 1891.

Black Rust of Cotton. Bull. 27, Ala. Agr. Exp. Sta. and Mech. Coll. May, 1891.

Anthracnose of Cotton. Jour. Mycol. VI, 173–178, 1890–91.

Sphaerella gossypina; the perfect stage of Cercospora gossypina Cke. Bull. Torr. Bot. Club. XVIII, 300–301, 1891.

Some Leaf Blights of Cotton. Bull. 36, Ala. Agr. Exp. Sta. Agr. and Mech. College, March, 1892.

Some Diseases of Cotton. Bull. Ala. Agr. Exp. Sta. Agr. and Mech. College. Dec. 1892.

The Genus Frankia in the United States. Bull. Torr. Bot. Club. XIX, 171–177, 1892.

Some Cercosporae from Alabama. Jour. Elisha Mitchell Sci. Soc. VIII, 1–35, 1892.

Additions to the Erysipheae of Alabama. Idem, X, 74–76, 1893.

Some Septoriae from Alabama. Idem, 76–78, 1893.

Germination of the Spores of Cerebella paspali. Bull. Torr. Bot. Club. XXI, 127–128, 1894.

Steps toward a Revision of the linosporous species of North American graminicolous Hypocreaceae. Bull. Torr. Bot. Club, XXI, 222–225, 1894.

Notes on some Exoasceae of the United States. Bull. Torr. Bot. Club. XXI, 372–380, 1894.

Leaf Curl and Plum Pockets; contribution to the prunicolous Exoasceae of the United States. Bull. 73, Cornell University Agr. Exp. Sta. Sept. 1894.

Diseases of Cotton. Bull. 33, U. S. Dept. Agr. Office of Exp. Sta. 278–316, 1896.

In the determination of some of the species I wish to acknowledge my indebtedness to Mr. Duggar, now Assistant botanist of the Cornell Univ. Agr. Exp. Sta., to Mr. George Massee of the Kew Herbarium who kindly examined some specimens and compared them with Berkeley's types; to Dr. P. A. Saccardo of Italy and Dr. G. Lindau of Berlin for kind advice on some points; to Dr. P. Dietel of Reichenbach for determining a large number of the Uredineae and for furnishing descriptions

of the new species in this group. In the determinations of the Basidiomycetes Mr. A. P. Morgan of Preston, Ohio has from time to time given great aid as well as Dr. Chas. Peck of Albany, N. Y., and Mr. J. B. Ellis of Newfield, N. J., to all of whom I wish to express my sincere gratitude.

The number of genera and species are distributed in the different groups as follows.

	Genera.	*Species.*
Perisporiaceae	8	29
Sphaeriaceae	26	44
Hypocreaceae	4	4
Dothidiaceae	4	9
Hysteriaceae	3	3
Discomycetes	8	15
Phycomycetes	8	25
Ustilagineae	5	9
Uredineae	14	76
Gastromycetes	11	29
Tremellineae	3	4
Dacryomycetaceae	2	3
Agaricaceae	22	69
Polyporaceae	8	35
Hydnaceae	1	4
Thelephoraceae	4	11
Clavariaceae	1	1
Sphaeroideae	14	59
Excipulaceae	3	3
Leptostromaceae	6	10
Melanconieae	8	27
Mucedineae	10	16
Dematieae	21	129
Tubercularieae	6	16
Uncertain	1	2
Total	201	644

Of these, 3 genera and 61 species are described in this bulletin as new ; the Uredineæ, 6 species in number, being credited to Dr. Dietel.

A few of the species which were collected have been lost and some therefore are not here reported, but of those which are still accessible a first duplicate series is deposited in the herbarium of Cornell University.

GEO. F. ATKINSON.

PERISPORIACEAE.

Dimerosporium erysipheoides E. & E. Forming brownish indefinite spots on leaves of Panicum anceps. 2057, Auburn, Aug. 24, 1891.

Dimerosporium orbiculare B. & C. Forming indefinite, obicular, blackish patches on the leaves of Ilex opaca, which are often confluent covering large areas on the upper side of the leaves. Auburn, Dec. 20, 1891.

Meliola bidentata Cke. Occurring in small irregularly orbicular patches on the upper side of the leaves of Bignonia capreolata, or the patches are confluent covering large areas. 2131, Auburn, Sept. 5, 1891, (Duggar.)

Meliola tenuis B. & C. Forming small orbicular pale spots on leaves of Arundinaria tecta. The spots are usually covered on the upper side by the black mycelium. 2257, Auburn, Oct. and Nov., 1891.

Meliola nidulans (Schwein.) Cke. Forming black orbicular velvety cushions on stems of a species of Cornus. The perithecia are immature, but as far as can be ascertained it seems to be this species. 2333, Auburn, Nov. 8, 1891.

Meliola manca E. &. M. Forming indefinite black patches on leaves of Rubus villosus. 2308, Auburn, Oct. 1891. On the same leaves occur *Triposporium elegans* Corda, and *Spegazzinia tricophilia* Atkinson.

Sphaerotheca castagnei Lev. On leaves of Bidens, Oct. 1889; Nov. 1891 (Duggar); on stems and leaves of Erechtites hieracixfolia, Nov. 5, 1891.

Sphaerotheca lanestris Hark. The conidial stage only was found. The leaves of the host are badly deformed and covered with a thick coating of the mycelium. Leaves of Quercus alba. 2083, Auburn, Aug. 21, 1891. Also Dec. of the same year.

Sphaerotheca humuli (DC.) Burrill. Probably this species. See note in Jour. Elisha Mitchell Sci. Soc. VII, 64, 1890.

Erysiphe communis (Wallr.) Fr. On leaves of Oenothera sinuata, Auburn, June 3, 1890. Also on Champion of England peas cultivated in garden in same year.

Erysiphe cichoracearum DC. On Ambrosia trifida, Uniontown; Ambrosia artemisiaefolia, Aster diffusus, A. tradescantia, Helianthus annuus, Mikania scandens, Solanum carolinense, Xanthium strumarium. Auburn. Duggar and Atkinson.

Erysiphe galeopsidis DC. On leaves of Verbena urticifolia, Auburn, Oct. 28, 1891 (Duggar.)

Erysiphe liriodendri Schwein. On leaves of Liriodendron tulipifera, Auburn, Oct. 28, 1891 (Duggar.)

Uncinula necator (Schwein.) Burr. On cultivated grape, Auburn, 1889.

Uncinula macrospora Peck. On leaves of Ulmus, Auburn, Aug. 6, 1890.

Uncinula flexuosa Peck. On leaves of Aesculus, Wright's Mill, Lee County, July and August, 1890.

Uncinula parvula C. & P. On shrubs of Celtis occidentalis. Wright's Mill, autumn, 1889.

Phyllactinia suffulta (Reb.) Sacc. Common on leaves of Ulmus, Auburn, autumn, 1889; Quercus nigra, Feb. 1890; Q. phellos and aquatica, Dec. 1890. On leaves of Cornus florida, Nov. 3, and Cornus species undet'd, Oct. 18, 1891.

Podosphaera biuncinata C. &. P. On leaves of Hamamelis virginiana, Oct. 28, 1891 (Duggar.)

Podosphaera oxyacanthae (DC.) D By. On leaves of Prunus americana, Auburn, Oct. 31, 1891 (Duggar); Crataegus species undet'd, Nov. 9 (Benton.)

Microsphaera semitosta B. & C. On leaves of Cephalanthus occidentalis, Auburn, autumn, 1889; what appears to be the same species was collected on leaves of Tecoma radicans at Auburn, Oct. 19, 1891. In mature specimens the appendages are quite characteristic. The specimens occurred in the vicinity of shrubs of Cephalanthus.

Microsphaera euphorbiae B. &. C. On leaves of Euphorbia preslii, Auburn, Oct. 21, 1891 (Duggar.) Also on other species of Euphorbia. It is quite common all through the year, even maturing its fruit in January.

Microsphaera ravenelii Berk. On leaves of Gleditschia tricanthos, Auburn, Oct. 13, 1891.

Microsphaera diffusa C. & P. On Desmodium species; and leaves of Lespedeza striata, Auburn, autumn, 1889.

Microsphaera grossulariae (Wallr.) Lev. On leaves of Sambucus canadensis, Auburn, Oct. 13, 1891.

Microsphaera alni (DC.) Winter. On leaves of Syringa, Union Springs (J. L. Moulton.)

Microsphaera quercina (Schwein.) Burrill. On leaves of Quercus nigra, stellata, rubra, and other species. Auburn.

Microsphaera calocladophora Atkinson. On leaves of Quercus aquatica, Auburn, 1804, Dec. 1890. Very easily separated from the M. quercina of oak by the character of the appendages.

Microsphaera vaccinii C. & P. On Vaccinium sp. Auburn, Oct. 18, 1891 (Duggar.)

SPHAERIACEAE.

Carlia bidwellii (Ellis) Magnus. Pycnidia (Phyllosticta labruscae) on leaves of Ampelopsis quinquefolia, Auburn, May 13, 1890. Stems and leaves of cultivated grape also.

Chaetomium pusillum E. & E. On old paper in culture vessels in the laboratory.

Chaetomium olivaceum C. & E. On dead stems of Gossypium herbaceum. 2196, Auburn, Oct. 7, 1891.

Chaetosphaeria brevispinosa Atkinson, n. sp. On leaf sheaths of Arundinaria tecta which were probably inhabited by an insect larva. Mycelium forming an extensive, thin, crustaceous, dark brown layer of brown septate non setose hyphae. Perithecia numerous, scattered or crowded, crustaceous, black, ovate or pyriform, 100–120 μ in diameter. Base and middle portion covered with setae, apex smooth. Setae short, septate, black, 20–35 x 5–7. Asci small, clavate, 25–35, sp. part, 20–25 x 10–15. Spores crowded, inequilateral, elliptical or clavate, 3–septate, constricted, 10–14 x 3–4. Auburn, 2171.

Daldinia concentrica (Bolt.) Ces. et DeNot. On dead trunk of deciduous tree. 1714, Prague Junction, July, 1890.

Diatrype stigma (Hoffm.) Fr. On dead oak limb. 1879, Auburn, Feb. 22, 1891.

Didymosphaeria eumorpha (B. & C.) Atkinson. Perithecia immersed, usually two to four in a row, elevating the epidermis, membranaceous, minutely papillate, wall of perithecium composed of elongated cells in radiating lines from base to apex. Paraphyses not branched. Asci cylindrical, stipitate, 86–120; sp. pr. 70–90 x 5–6. Spores 8, uniseriate, end to end, brown, 1–septate, lightly constricted, oblong to elliptical, 10–14 x 3–3.5, Differs from D. donacina (Niessl.) Sacc. On stems of Arundinaria tecta. 2164, Auburn, Sept. 19, 1891 (Duggar). This agrees exactly with Berkeley's description of Sphaeria eumorpha (Grev. IV, p. 145) which Cooke placed in Sphaerella (Jour. Bot. 1883), and Saccardo placed in Didymella (Syll. 1, 560). Berkeley's description is very brief and does not give the color of the spores. At my request Mr. Massee kindly examined Berkeley's type in the Kew Herbarium and writes me that the spores are brown. This would place the species in the genus Didymosphaeria rather than in Didymella.

Heptameria mesoedema (B. & C.) Sacc. On stems of Eupatorium. 2125, Auburn, Sept. 17, 1891 (Duggar.)

Hypoxylon perforatum (Schwein.) Fr. On canes of Arundinaria tecta. 2165, Auburn, Aug. 23, 1891 (Duggar.)

Hypoxylon annulatum (Schwein.) Mont. On dead oak limb. 1354, Auburn, Aug. 1890.

Hypoxylon purpureum Nits. On dead branches. Gallion, Aug. 14, 1894 (Duggar).

Hypoxylon fuscum (Pers.) Fr. On dead oak limb. 1035, Auburn, autumn, 1889.

Lentomita longirostrata Atkinson, n. sp. Perithecia immersed, long ostiolum only erumpent, epidermis not elevated, membranaceous, 300–350, neck as long or longer. Asci fusoid–cylindrical, delicate but a little thickened at the apex, stipitate, the stipe deciduous, 30–40 x 7–9. Paraphyses long filiform, granular. Spores 8, biseriate, oblong-fusoid, 1–septate in middle, not constricted, 12–14 x 3. On stems of Ambrosia artemisiaefolia, Auburn, Oct. 1, 1891 (Duggar). Differs from L. longicollis Karst. On same stems with Ophiobolus, etc.

Leptosphaeria michotii (West.) Sacc. A few perithecia on leaves of Elymus sp. Associated with or on same leaves with L. elymi. 1175d, Auburn, July 5, 1890.

Leptosphaeria elymi Atkinson, n. sp. Perithecia loosely aggregated or scattered, few, covered, flattened, very short ostiolum erumpent, minute, 70–100. Asci cylindrical-oblong, short stipitate, 35–50 x 10–14. Spores crowded, bi-tri-seriate, honey yellow, fusoid-inequilateral, 5–septate, 18–24 x 3–3.5. Paraphyses filiform. On dead portions of leaves of Elymus, 1175a, Auburn, July, 5, 1890.

Leptosphaeria planiuscula (Riess.) Ces. et DeNot. On dead stems of some herbaceous plant, probably of the Compositae. 1920, Auburn, May 15, 1891.

Leptosphaeria pomona Sacc. On leaves of Pirus malus, Gold Hill, 1830, Sept. 1890. With 1820 (Phyllosticta pirina.)

Lophiostoma niessleanum Sacc. On dead stems of Ambrosia artemisiaefolia, Auburn, Oct. 1, 1891 (Duggar.)

Massarina chrysopogonis Atkinson, n. sp. Perithecia immersed, veiled by the epidermis which is elevated, membranaceous. Asci clavate, short pedicellate, 75–90 x 12–14. Paraphyses filiform. Spores subdistichous, hyaline, oblong-elliptical, 4–5 septate, involved in an abundant mucous layer which is broadly elliptical, the diameter of which is equal to or greater than that of the spore, sometimes rather indistinct. Spores 20–25 x 5–6. On dead stems of Chrysopogon nutans. Auburn, Nov. 1, 1891.

Melanconis hicoriae Atkinson, n. sp. Stroma small, perithecia monostichous, necks converging to the small dark disc. Asic cylindrical-elliptical, 70–90 x 10–12, paraphysate. Spores biseriate, oblong-cylindrical, 1–septate, not constricted. Sometimes one of the cells which may be a little narrower, indistinctly septate or plasma

divided, 15–20 x 4–5. Each end of the spore with a short straight apiculus 2 x 0.5. Near M.alni but spores and setae smaller. On branches of Hicoria alba, Auburn, Jan. 1891.

Metasphaeria infuscans E. & E. On dead stems of Andropogon virginicus. 2101, Auburn, Sept. 12, 1891 (Duggar.)

Metasphaeria graminum Sacc. On dead leaves of Chrysopogon nutans. 2099, Auburn, Sept. 12, 1891 (Duggar.)

Metasphaeria ambrosiaecola Atkinson, n. sp. Perithecia gregarius or scattered, immersed, erumpent, depressed, at length cupulate, papillate, black, 250–300. Asci cylindrical-clavate, 40–60 x 10–12. Paraphyses filiform. Spores hyaline, fusoid-cylindrical, with rounded ends, straight or a little curved, faintly 1–3 septate, little constricted, 20–35 x 3–4, oblong, uniseriate or biseriate. On dead stems of Ambrosia artemisiaefolia. Auburn, Oct. 1, 1891 (Duggar.)

Montagnella heliopsidis (Schwein.) Sacc. Forming black extensive cushions on leaves and stems of Heliopsis sp. Auburn, summer and autumn.

Nummularia nummularia (Bull.) On dead branches and trunks of deciduous trees. Auburn, 1890.

Ophiobolus anguillides (Cke.) Sacc. On dead stems of Ambrosia artemisiaefolia. 2412, Auburn, May, 1892.

Ophiobolus porphyrogonus (Tode) Sacc. On cut end of stem of Gossypium herbaceum. 2217, Auburn, Oct. 10, 1891.

Ophiobolus glomus (B. & C.) Sacc. Perithecia scattered or gregarious, small, 200–300, erumpent, convex, shortly papillate. Asci fusoid, 50–70 x 12–15; paraphyses filiform. Spores straight or curved, cylindrical, hyaline, faintly septate, cells all alike, 25–60 x 3–4. On stems of Ambrosia artemisiaefolia. 2433, Auburn, May, 1892. Differs from Ophiobolus anguillides, though found on the same stems; on the same stems were found also Metasphaeria leiostega and Lophiostoma niessleanum. The original description was very imperfect.

Parodiella grammodes (Kze.) Cke. On leaves of Desmodium paniculatum, Auburn, common. Usually known as P. perisporioides.

Physalospora ilicis (Schleich.) Sacc. On leaves of Ilex opaca, with Dimerosporium orbiculare. Auburn, autumn, 1891.

Physalospora carpogena Atkinson, n. sp. Perithecia black, erumpent, of coarse texture, not papillate, 80–100. Asci clavate to cylindrical, [illegible] x 10–12; [illegible]. Spores biseriate, clavate to broadly fusoid, inequilateral, hyaline, [illegible] x 3.5–4. Sometimes associated [illegible] arrocress. On seeds of Rubus vill[illegible] (Duggar).

Pleospora americana E. & E. 1191, on leaves of Dolichos sinensis, Auburn, June 30, 1890; 1901, stems of Viola tricolor, Feb. 23, 1891.

Pleospora nigricantia Atkinson, n. sp. Perithecia minute, 120–150. Asci ovate-obovate, 70–90 x 35–45. Spores crowded, elliptical to oblong, rounded at the ends, 5-septate, four middle cells longitudinally divided, not or slightly constricted, brown, 35–40 x 16–18. On fallen leaves of Gossypium herbaceum, which were attacked by Macrosporium nigricantium, 1802.

Plowrightia morbosa (Schwein.) Sacc. 2133, on branches of Prunus umbellata, Auburn; 2256, on branches of Prunus americana, Pike Roads.

Rosellina aquila (Fr.) DeNot. On dead branches of deciduous trees. Auburn, 1880, Feb. 22, 1891.

Scirrhia sporoboli Atkinson, n. sp. Stroma 1–3 mm long x 200–500 wide, narrow, black, whitish within, erumpent. Perithecia (locules) small, 120–150, with a short prominent rostrum. Asci clavate, tapering below into a slender pedicel, 50–70 x 8–9; paraphyses filiform. Spores biseriate, fusoid, inequilateral, 1–septate, hyaline, granular, 12–16 x 3–4. Differs from S. rimosa in prominent perithecia and in size and shape of spores and asci. 2040, Auburn, on stems of Sporobolus asper. (Duggar and Newman.)

Sphaerella colorata Pk. On leaves of Kalmia, 2374, Auburn, 1890.

Sphaerella arundinariae Atkinson, n. sp. Spots large irregular. Perithecia seated on a branching brown, stout mycelium on the outer surface of the leaf, minute but prominent, rotund, membranaceous, not papillate, 60–80. Asci ovate, 30–40 x 12–14, not paraphysate. Spores crowded, lanceolate or ovate, 1–septate, 11–13 x 3–4. On leaves of Arundinaria tecta, Auburn.

Sphaerella leptopleura DeNot. Perithecia underneath the epidermis, membranaceous, depressed, ostiolum prominent, not papillate, 150–200. Asci numerous, clavate-cylindrical, 35–50 x 7–9. Spores oblong, curved or straight, 10–14 x 2.5–3, faintly septate in the middle. On rotting leaves of Secale cereale. 1907, Auburn.

Sphaerella baptisiicola (Cke.) E. & E. Few perithecia on dead portions of leaves of Elymus, with Leptosphaeria elymi. 1775f, Auburn, July 5, 1890.

Sphaerella gossypina Atkinson. On leaves of Gossypium herbaceum, following Cercospora gossypina, of which it is probably the perithecial stage. 2134, Alberta, Station; Auburn, 1890.

Urosporella, Atkinson, new genus. Characters of Urospora but spores with a long slender cilium-like, flexuous flagellum at each end, instead of a firm and rather stout appendage as in Urospora.

Urosporella americana Atkinson, n. sp. Perithecia immersed, black, prominent, strongly elevating the epidermis, globose, usually with a very short minute papillate ostiolum, apex of perithecium erumpent, 250–300. No paraphyses. Asci cylindrical, stipitate, 70–80 x 7–9. Spores 8, elliptical, inequilateral, hyaline, with a very slender hyaline flexuous cilium or flagellum at each end, 10–12 x 5–7 without the cilia, cilia 7–10 x 0.5. On dead stems of an herb. 1770, Auburn, July, 1890.

Xylaria polymorpha (Pers.) Grev. On trunk of dead Magnolia, 1287, Shorters, July 16, 1890.

Xylaria hypoxylon (Linn.) Grev. On old stump, Auburn, March, 1891.

HYPOCREACEAE.

Echinodothis tuberiformis (B. & R.) Atkinson. Bull. Torr. Bot. Club. XXI, 224, 1894.

Hypocrea tuberiformis B. & R. Grev. IV, 13.

Hypocrella tuberiformis Atkinson, Bot. Gaz. XVI, 282, 1891.

Not Dussiella tuberiformis Patouillard, Bull. Soc. Mycol. France, VI, 107, 1890. On canes of Arundinaria tecta, Auburn, Aug. Oct. 1891.

Eleutheromyces subulatus (Tode) Fuckel. On decaying Agaric, Auburn.

Hypomyces lactifluorum (Schwein) Tul. On Lactarius sp. Auburn, 1897, Aug. 1890.

Nectria episphaeria (Tode) Fr. On Diatrype stigma. 1878, Auburn, Feb. 22, 1891.

DOTHIDEACEAE.

Dothichloe hypoxylon (Pk.) Atkinson. Bull. Torr. Bot. Club. XXI, 223, 1894.

Epichloe hypoxylon Pk. 27th Rep. N. Y. State Mus., 108.

Hypocrea atramentosa B. & C. Jour. Linn. Soc. X, 377.

Dothidea atramentaria B. & C. Grev. IV, 105 (where it is placed as a form of D. vorax B. & C.)

Hypocrella hypoxylon Sacc. Syll. V, 581.

Ophiodothis hypoxylon Sacc. 1897.

On stems and leaves of grasses; 2094, 1169, 1897, etc., on Andropogon virginicus, Aug. 30, 1891; 2118, Eagrostis tenuis, Auburn, Sept. '91; 2144a Eagrostis campestris, Sept. '91. Material of this species was sent to Mr. Geo. Massee who kindly compared it with Berkeley's types, and says that it is identical with Epichloe atramentaria B. & C. and also with Peck's E. hypoxylon. He thinks however that it is distinct from Berkeley's D. vorax and pillulaeformis. These I have not had an opportunity to see. It is certainly dothideaceous, and if no account

were taken of the difference between species in which the spores remain intact, and those which fall into short segments at maturity, it would go into Saccardo's genus Ophiodothis. Ophiodothis however was characterized as possessing continuous spores. There are some species in the genus in which the spores remain intact. I would separate the scolecosporous species of the Dothideaceae, as thus far known, into two genera on the character of the spores, one with permanent linear spores, and the other with spores which separate into segments at maturity. To Ophiodothis belong those in which the spore remains intact, while to Dothichloe I would remove those species in which the spores separate into segments at maturity. This distinction is equal to that which obtains in the case of Ohleria, as compared with related genera, where in the former the spores at maturity are divided into two parts, making apparently double the number in an ascus. Ophiodothis tarda Harkness, New Calif. Fungi, 26; Sacc. Syll. Fung. IX, 1051, has spores either guttulate or septate, and at maturity they do not separate into segments, as I have seen from specimens kindly sent me by Dr. Harkness. This I would take as the type of Ophiodothis.

Dothichloe aristidae Atkinson. Bull. Torr. Bot. Club. XXI, 224, 1894. Forming black roughened stromata which entirely encircle the stems of Aristida purpurascens, var. minor. 2145, Auburn, Sept. 12, 2252, Oct. 3, 1891 (Duggar and Atkinson).

Myriogenospora paspali Atkinson. Bull. Torr. Bot. Club. XXI, 225, 1894. On leaves of Paspalum laeve, Auburn.

Botryosphaeria berengeriana DeNot. On dead capsules of Gossypium herbaceum. 2354, Auburn, autumn, 1890. (Determined by Dr. Massee).

Phyllachora graminis (Pers.) Fuckel. On leaves of varius grasses; 1961, Panicum; 1994, Paspalum laeve; 2173 Eagrostis tenuis; 2175 Muhlenberga diffusa; 2112 Paspalum setaceum; 1551 Sorghum halapense; 2049 Panicum agrostoldes, Auburn (Duggar, Newman, Atkinson).

Phyllachora cynodontis Niess. On leaves of Andropodon sp. 1301 Shorters; Sporobolus indicus, 1238, Auburn, July 25, 1890. Stroma usually smaller than in P. graminis, and spores larger, and acutely elliptical.

Phyllachora cornuospora Atkinson, n. sp. Stroma similar to that of P. graminis. Asci cylindrical to clavate, 50–70 x 10–15. Spores uniseriate or biseriate, long ovate with a straight or curved process or appendage at the broader end, 14–17 x 5–7. On leaves of Panicum agrostoides. 2049, Auburn, Aug. 27, 1891.

Phyllachora ambrosiae (B. & C.) Sacc. Stromata scattered or crowded, small, black, convex, extending entirely through the leaf and showing the convexity on both sides of the leaf. Asci-

gerous cells 1–3 in a stroma. Asci cylindrical, 70–80 x 9–12, short pedicellate. Spores uniseriate, rarely subbiseriate, hyaline, elliptical or nearly sphaeroid, broadly rounded ends, 9–12 x 6–7, granular. On leaves of Ambrosia artimesiaefolia, Auburn, 1890.

Dothidea ambrosiae Schwein., was described earlier than D. ambrosiae B. & C., and Saccardo placed both in Phyllachora. Ellis (N. A. P. 598) says that Dothidea ambrosiae is not a Phyllachora. Were it a Phyllachora then D. ambrosiae B. & C. would require a new name. Although Saccardo placed both in the genus Phyllachora, if Schweinitz' species is not a member of this genus it would not seem necessary to give a new name to Berkeley's species since Saccardo wrote Phyllachora ambrosiae (B. & C.) on an earlier page of his Sylloge (601) than P. ambrosiae (Schwein), the latter being on page 620.

Phyllachora lespedezae (Schwein.) Sacc. On leaves of Lespedeza sp. 1816, Auburn, Oct. 21, 1890.

HYSTERIACEAE.

Hysterium erianthicola Atkinson, n. sp. Perithecia black, carbonaceous, short oblong, cleft very narrow, 2–3 mm long by 1½ mm broad; Asci clavate, 90–120 x 10–12; paraphysate. Spores 2–3 seriate, 8–9 septate, yellowish, cylindrical, curved, fourth cell from the end broader than the others, 30–35 x 3–4.2257, on Erianthus sp., Auburn, Sept. 26, 1891.

Lophidium anomalum Atkinson, n. sp. Perithecia erumpent, black, carbonaceous, elongate, resembling those of the Hysteriaceae, 400–700 x 200–300, ostiolum inconspicuous, sometimes one central one compressed, sometimes little raised above the convex surface of perithecium and not compressed, sometimes several ostiola lateral and in such cases there are several groups of asci each group corresponding to a single ostiolum. Asci long cylindrical, stipitate, 170–200 paraphyses filiform. Spores 8 usually uniseriate, sometimes subbiseriate, 4–6 septate, little constricted at middle, straight, very rarely little curved, 1–3 of the middle septa longitudinally septate, 22–28 x 7–9. On culms of Erianthus, associated with Hendersonia erianthi. **Differs from Lophidium hygrophilum** Sacc., which is associated **with Hendersonia donacis. Auburn, 2345a,** Nov. 12, 1891 **(Duggar).**

Rhytidhysterium [illegible] **aclura au-**
rantiaca, Gallic

DISCOMYCETES.

Exoascus australis Atkinson. Deforming leaves of Carpinus americanus. Auburn, 2401, Apr. 30, 1892.

Exoascus deformans (Berk.) Fuckel. Deforming the leaves, rarely the shoots of Prunus persica. Auburn.

Exoascus farlowii Sadebeck. Deforming the fruits of Prunus serotina. A form occurring on the leaves of the same trees and called by myself E. varius (Bull. Torr. Bot. Club. XXI, 1,378, 1894) is considered by Giesenhagen (Flora, 1895) as identical with E. farlowii. Auburn.

Exoascus mirabilis Atkinson. Deforming the buds, more rarely the fruits of Prunus angustifolia. Auburn.

Exoascus rhizipes Atkinson. Deforming the buds and fruits of Prunus triflora. Auburn.

Taphrina caerulescens (D. & M.) Tul. On various species of Quercus and showing considerable variation in the size of the asci and the size of the spores, as well as the size of the affected areas on the different hosts. Whether these represeut different species must be determined by farther investigation. Material was collected on the following species of Quercus. Q. nigra, phellos, aquatica, falcata obtusiloba, cinerea. Auburn.

Belonium eustegiaeforme (B. & C.) Sacc. Ascoma first appearing as numerous black points under the epidermis, then erumpent, cupulate, sessile, dark brown, 200–300, disk pale in drying, margin collapsing in various positions partly or entirely covering the disk. Asci cylindrical clavate, 80–100 x 12–14; paraphyses filiform. Spores biseriate, long clavate or fusoid, hyaline, continuous then 3–septate, straight or inequilateral, 20–30 x 5–7. On dead canes of Arundinaria tecta, Shorters, 1300, July 16, 1890. Agrees with specimens in Rav. F. A. E. 310, Peziza eustegiaeforme B. & C. N. A. F. 741; P. arundinariae Cke., Dysc. U. S. p. 297. Placed by Saccardo doubtfully in Belonium, and a full description is given above from the Alabama material because of the meager original description. It is a good Belonium.

Pezizella translucens (Gill.) Sacc. Cups straw color, sessile, thin, concave, then expanded, margin undulate, 2–4 mm in diameter. On decaying wood, 1285, Shorters, July 16, 1890.

Pyrenopeziza atrata (Pers.) Fuckel. On dead stems of Ambrosia artemisiaefolia. Auburn, 2367, winter, 1891.

Rhytisma acerinum (Pers.) Fr. Forming yellowish irregular spots with black cushions on the upper side of leaves of Acer rubrum. Discosia artocreas is frequently associated with it. Auburn, 2000. July 22, 1891. (Duggar and Newman).

Rhytisma vaccinii (Schwein.) Fr. On living leaves of Vaccinium arboreum. Agrees with R. acerinum Schwein., in Ellis N. A. F. 899, but the stromata are epiphyllous on amphigenous spots. 2205, Auburn.

Rhytisma curtisii B. & R. On leaves of Ilex opaca. 2136, Auburn, Sept. 13, 1891.

Rhytisma solidaginis. Various species of Solidago. Auburn.

Scleroderris arundinariae Atkinson, n. sp. Ascomata 0.5–1 mm in diameter flattened sessile, sometimes margin irregularly incurved, dark brown, disk pale. Asci cylindrical to clavate 100–120 x 12–14; paraphysate. Spores 8, biseriate, clavate-cylindrical or fusoid, hyaline, usually 3–4 septate, 35–40 x 3–4. On dead canes of Arundinaria tecta. 1311, Auburn, July 27, 1890.

Xylogramma graminis Atkinson, n. sp. Ascomata linear, dark brown, immersed, blackening the epidermis above which it splits above, the light colored disk just visible between the margins which are not elevated above the epidermis, 2–4mm long. Asci oblong to cylindrical, short stipitate, 40–60 x 10–12; paraphysate. Spores 8 biseriate, oblong to clavate (one end narrowed), faintly 3–4-septate, hyaline, 12–15 x 2–3. On stems of Chrysopogon nutans. 2434, Auburn, Nov. 1, 1891 (Duggar). Differs from X. holoschoeni (DeNot.) Sacc.

PHYCOMYCETES.

Empusa apiculata Thaxter. On dipterous insect. 1784, Auburn, Jan. 1890.

Saprolegnia monoica Pringsh. On dead flies in water. Auburn.

Saprolegnia declina Humphrey. On dead flies in water. Auburn.

Achlya americana Humphrey. On dead flies in water. Auburn.

Achlya apiculata DeBy. On dead flies in water. Auburn.

Achlya oblongata var globosa Humphrey. On dead flies in water. Auburn.

Cystopus bliti (Biv.) DBy. On leaves of Amarantus retroflexus, and A. spinosus. Auburn, June 20, 1890.

Cystopus tragopogonis (Pers.) Schroeter. On leaves of Ambrosia artemisiaefolia. Pike Roads, 1890.

Cystopus portulacae (DC.) Lev. On leaves of Portulaca, Auburn, July 3, 1890.

Cystopus ipomoeae-panduranae (Schwein.) Farl. On leaves and stems of Ipomoea. On the stems large galls are frequently formed in which the oospores are developed abundantly. Also on leaves of Ipomoea batatas. Auburn.

Cystopus candidus (Pers.) Lev. On Lepidium; cultivated cress, etc. *Auburn.*

Basidiophora entospora R. et C. On leaves of a young plant of some species of Aster or Erigeron. 1094, 1058, Auburn, Feb. 1890.

Bremia lactucae Regel. On leaves of Lactuca. Auburn, spring, 1890.

Peronospora parasitica (Pers.) DBy. On leaves of several species of Cruciferae in late winter and early spring. Auburn.

Peronospora lamii (A. Braun) DBy. On leaves of Lamium amplexicaule. Oospores in dead portions of the leaves. Auburn, 1070, 1075, 1823 (with oospores), Jan. 1890–91.

Peronospora violae DBy. Petioles and leaves of Viola tricolor var arvemsis. Auburn, 1900, Feb. 24, 1891.

Peronospora trifoliorum DBy. On leaves of Trifolium carolinianum. Auburn, 2377, Dec. 27, 1891 ; Jan. 24, 1892.

Peronospora alsinearum Casp. On leaves of Cerastium. Auburn, Feb. and Dec. 1890.

Peronospora arthuri Farl. On leaves of Oenothera sinuata. 1060, Auburn, Mar. 24, 1890.

Peronospora alta Fuckel. On leaves of Plantago sp. Auburn, 1068, Apr. 17, 1890.

Peronospora calotheca DBy. On leaves of Houstonia patens. 1065, 1067, Auburn, Mar. 23, and Apr. 15, 1890. Oospores abundant in some of the leaves and stems. Underwood (Bull. Torr. Bot. Club, XXIV, 83, 1897) has referred specimens collected on this host in Alabama to P. seymourii Burrill, though he did not see the oospores. In my specimens the wall of the oogonium is not brown, and the oospores as well as other parts agree well with De Bary's description and figures (Ann. d. Sci. Nat. Bot. Ser. 4, XX, 111. 1863).

Plasmopara viticola (B. & C.) Berl. et DeToni. On leaves, stems and fruit of cultivated Vitis. Auburn.

Plasmopara geranii (Pk.) DeToni. On leaves of Geranium carolinianum. Auburn, 1086, Dec.–Apr. 1870, oospores in petioles and laminae of leaves.

Plasmopara halstedii (Farl.) Berl. et. DeToni. Auburn, 1140, in leaves of Gnaphalium purpureum ; 2031 in leaves of Bidens, Aug. 27, 1891.

USTILAGINEAE.

Entyloma saniculae Pk. Causing small orbicular or angular spots on leaves of Sanicula sp. Surface of the spots frosted with the numerous conidia ; teleutospores in the tissues. Auburn, 2402, May 1 and 9, 1892.

Cintractia sorghi (Sorok.) DeToni. On Sorghum vulgare (kaffir corn). Uniontown, Oct. 2, 1892 (Duggar).

Sorosporium everhartii E. & G. In inflorescence of Andropogon virginicus, Auburn.

Ustilago cesatii Fisch. d. Wald. In ovaries of Panicum sanguinale. Auburn, autumn, 1889.

Ustilago zeae (Berkman) Arthur. In staminate and pistillate inflorescences and in the canes and leaves of Zea mays. Auburn (Duggar and Atkinson).

Ustilago tritici (Pers.) Jensen. In ovaries, etc., of Triticum vulgare. Auburn, May.

Ustilago avenae (Pers.) Jensen. In inflorescence of Avena sativa. Auburn, May.

Ustilago utriculosa (Nees) Tul. In ovaries of Polygonum pennsylvanicum. Auburn, 2121, Oct. 18, 1891 (Duggar); 1594, P. hydropiper, Prague Junction, Sept. 6, 1890.

Tolyposporella Atkinson, n. gen. Spore balls composed of numerous spores which are firmly agglutinated by their thick sac-like epispores. Promycelium branched, septate. Sporidia pleurogenous, single.

Tolyposporella chrysopogonis Atkinson n. sp. Spore balls forming powdery masses underneath the leaf sheaths on the culms of Chrysopogon nutans. Spore balls black, large, irregular, oval, spherical, oblong or elliptical, 50–175 x 40–80μ. Spores firmly agglutinated in mass, irregularly globose or somewhat angular, epispore thick, sac-like, dark brown, 10–15μ in diameter. Germinating by a delicate promycelium which becomes branched, septate. Sporidia pleurogenous, single, subclavate or fusoid, curved or inequilateral, proximal end sometimes somewhat sigmoid, 9–12 x 2–2.5μ. Auburn, autumn. Collected several times by Mr. Duggar. Material for the germination of the spores was taken from the herbarium which was collected the previous autumn, and also from fresh material which I collected in March, 1892.

UREDINEAE.

Chrysomyxa albida Kühn. Teleutospores forming minute white points in yellowish areas of languid leaves of Rubus villosus. Shorters, 1290, July 16, 1890; Auburn, 1542, July 22, 1890; 2277, Oct. 26, 1891.

Coleosporium vernoniae B. & C. On leaves of Vernonia altissima. Auburn, 1266.

Coleosporium sonchi-arvensis (Pers.) Lev. On leaves of various *Compositae*; probably when the life history of the forms on differ-

ent hosts have been studied there will be found to be several species now accredited to a single one. Material was collected on the following species: Aster diffusus, patens, dumosus, puniceus, undulatus, tradescanti; Solidago patula, canadensis, rugosa; Eupatorium purpureum and Liatris graminifolia, Elephantopus tomentosus, nudatus, carolinianus. Duggar and Atkinson.

Coleosporium ipomoeae (Schwein.) Burrill. Auburn, 2059, Impomoea purpurea, Aug. 17, 1891 (Duggar), 2152, Sept. 1891 (Newman), 2153, Convolvulus sepium, Sept. 8, 1891.

Gymnosporangium macropus Link. Roestelia in leaves and fruit of Pyrus malus, and P. coronaria; teleutospores on Juniperus virginiana. Teleutospores March and April, roestelia in July and August. Common in different parts of the State.

Gymnosporangium clavipes Cke. & Pk. Roestelia on leaves, branches and fruit of Cydonia vulgaris, Cydonia japonica, and various species of Crataegus. Common in various parts of the State.

Melampsora farinosa (Pers.) Schroeter. On leaves of Salix nigra. Auburn; common.

Melampsora populina (Jacq.) Lev. On leaves of Populus grandidentata, and angulata.

Phragmidium obtusum (Str.) Schum. & Kze. On leaves of Fragaria indica, uredo stage. Mobile, April, July, 1891. (Det. Dietel.)

Puccinia emaculata Schwein. On leaves of Triodea cuprea; Auburn, 2202, Oct. 7, 1891 (Atkinson); 2194, Sept. 30, 1891 (Newman); 2195, languishing leaves of Panicum virgatum; Tricuspis sessleroides 2122, Sept. 17, 1891 (Duggar). Also 1791 and 2224 on languishing leaves of Panicum virgatum; 2106 on dead leaves of Panicum virgatum, Sept. 14, 1891, (Det. Dietel).

Puccinia asteris Duby. On young leaves of a species of Aster. Auburn, 1080, teleutospores germinating Jan. and March, 1890; 2282, Oct. 22, 1891 (Duggar.)

Puccinia helianthi Schwein. On leaves of Helianthus angustifolius, Auburn, 2248, Oct. 15, 1891; H. annuus, 2021, Aug. 24, 1891; H. tuberosus, 2131, Sept. 10, 1891; also 1573, 2248a and 2189 (Det. Dietel). In some cases all three stages on the same plant.

Puccinia xanthii Schw. On leaves of Xanthium strumarium. Auburn, 1758, Aug. 1890.

Puccinia xanthii var. ambrosiae B. & R. On leaves of Ambrosia trifida, Pike Roads, 1938, July 9, 1891; Hope Hull, Aug. 1891 (Det. Dietel).

Puccinia violae (Schum.) DC. On leaves of Viola cucullata. Auburn, 1195, June 23, 1890; 1556, Jul. 22, '90; 2325 Nov. 9, '91.

Puccinia sorghi Schw. On leaves of Zea mays. Auburn, 2359, Aug. 1891 (Newman). Auburn, 1022, 1889; Mathews, 2253, Oct. 10, 1891.

Puccinia heterospora B. & C. On leaves of Sida spinosa.

Puccinia rubigo-vera (DC.) Wint. On leaves of Hordeum vulgare. Uniontown, 1271 (uredo stage) July 11, 1890 (Det. Dietel).

Puccinia caricis (Schum.) Reb. (?) On Carex lurida. Auburn, 2368, Aug. 29, 1891; 2329. The latter number was sent to Dr. Dietel who refers it doubtfully to this species with these remarks. "This determination is extremely doubtful since the gross appearance of the fungus on the host differs from that of P. caricis, but in the form of the spores I find no difference."

Puccinia polysora Underw. On Tripsacum dactyloides. Auburn, 2290, Oct. 28, 1891; 2221, Oct. 14, 1891 (Duggar).

Puccinia fuirenae Cke. Sori forming prominent small black dots on leaves, sheaths and stems of Fuirena. Auburn, 2297, Nov. 3, 1891 (Duggar).

Puccinia nigrovelata Ellis & Tracy. On cyperus retroflexus, Cyperus, rotundus, Auburn, 2167, Sept. 12, 1891 (Duggar. Det. Dietel); Shorters, 1306, July 16, 1890.

Puccinia hieracii (Schum.) Mart. On leaves, stems and bracts of Pyrrhopappus carolinensis. Auburn, May-July, 1890-91, Nos. 1158, 1575, 1959. Also on Cirsium sp. 2268, Oct. 28, 1891 (Det. Dietel).

Puccinia silphii Schw. On leaves and stems of Silphium. Auburn, 1548, July 1890-91 (Det. Dietel).

Puccinia smilacis Schw. On leaves of Smilax Glauca. Auburn, 1079, uredo and teleutospores, Feb. 16, 1891; also at Shorters on same host.

Puccinia hydrocotyles (Mont.) Cke. On leaves of Hydrocotyle umbellata. Auburn, Nov. 9, 1891.

Puccinia menthae Pers. VanDorn, on Salvia azurea var. grandiflora, Aug. 15, 1894 (Duggar). On leaves of Pycnanthemum sp. Highland Park, Montgomery, 2249, Oct. 1891.

Puccinia pruni-spinosae Pers. Auburn, 1109. On leaves of Prunus persica (uredospores); 1815 on leaves of Prunus angustifolia, Oct. 25, 1890; (Atkinson); 2203 on leaves of Prunus serotina, Oct. 3, 1891; 2287 P. americana, Oct. 29, 1891 (Duggar).

Puccinia spegazzinii DeToni. On leaves of Mikania Scandens. Auburn, Aug.-Sept.-Nov., 1891, (Duggar).

Puccinia pekiana Howe. On leaves of Rubus trivialis, Auburn, common. Aecidial stage only.

Puccinia argentata (Schultz) Winter. On leaves of Impatiens fulva, 1176, Uredo sori numerous, teleutospores few, June 30, 1890 (aecidia collected earlier), Parkinson's Mill near Auburn; 2250, Oct. 11, 1891.

Puccinia graminis Pers.? Auburn, 1099, uredo stage, on leaves of Secale cereale, Feb. 14, 1890.

Puccinia coronata Corda. On leaves of Avena sativa. Auburn, 1136, spring, 1890..

Puccinia purpurea Cke. Uniontown, Oct. 1892, on leaves of Sorghum halapense (Duggar det.)

Puccinia seymeriae Burr. On leaves of Gerardia tenuifolia. Uniontown, Sept. 4, 1894 (Duggar det.)

Puccinia verbesinae Schw. On leaves of Verbesina siegesbeckia. Mobile, 1277, July 14, 1890. Teleutospores frequently abnormal with 3–5 cells. (Det. Dietel).

Puccinia angustata Pk. On leaves of Scirpus cyperinus var. eriophorum. Auburn, 2322, Nov. 8, 1891 (Det. Dietel).

Puccinia atkinsoniana Dietel n. sp. Sori on the under side of the leaves, a few also upon the upper side. Uredo-sori elliptical to linear, cinnamon-brown, surrounded by the ruptured epidermis. Uredospores elliptical, obovate or rarely spherical, 22–30 x 17–22, epispore spinulose, yellowish-brown, with 2 germpores lying very near the apex. Teleutosori blackish-brown, arched in the form of a cushion, circular, elliptical or linear, firm. Teleutospores mostly clavate, at the septum generally somewhat deeply constricted, 40–60 x 18–28, upper cell spherical or oval, rounded at the apex, provided with a thick wall, at the apex 5–10 in diameter, lower cell generally cuneiform and narrowing into the pedicel or rounded at the base, epispore smooth, brown ; pedicel 20–60 long, durable. In the specimens, 2067, are numerous one-celled teleutospores which are of the same length as the two-celled ones of the clavate form. On Carex lurida. Auburn, 2067, Aug. 29 ; 2240, Oct. 11, 1891 ; 2343 (Atkinson) ; 2174, Sept. 22, 1891 (Duggar).

Puccinia minuta Dietel n. sp. Sori on the under side of the leaves, punctiform, very small, the teleutospore-sori long covered by the strongly arched epidermis. Uredospores spherical about 30 in diameter or broadly elliptical, 28-34 x 26-31, dark brown, spinulose, three germ pores. Teleutospores oblong rounded at both ends or at the base tapering into the short thick pedicel, slightly constricted at the middle, epispore smooth, brown, at the apex about 7 μ in diameter. On Carex verrucosa. Auburn, 2068, Aug. 29, 1891

Puccinia sanguinea Dietel n. sp. Sori on purple-red spots scattered on the under side of the leaves, small or of medium size, covered by the strongly arched epidermis. Uredospores obovate or spherical, 28-38 x 22-28, intensely brown. spinulose. Teleutospores elliptical, rounded at both ends, at the septum somewhat constricted, 40–47 x 27–33, smooth, chestnut brown, with long pedicels. Distinct from P. purpurea Cke. On Sorghum vulgare (kaffir corn). Auburn 2392, Dec. 22, 1888.

Puccinastrum crotonis (Burr.) DeToni. Forming enlarged pustules partly or entirely surrounding the stems of Croton. Huntsville, Sept. 9, 1892.

Ravenelia cassiaecola Atkinson. On leaves and stems of Cassia nictitans. Auburn, 1585, Sept. 4, 1890. Common, and collected at other times.

Ravenelia glanduliformis B. & C. Auburn. 2146, etc., Tephrosia spicata, Sept.-Oct., 1891; 2228, Tephrosia virginiana, Sept. 1891; 2020, etc., Tephrosia hispida, Sept.-Oct. 1891 (Duggar and Atkinson).

Uromyces trifolii (Hedw.) Lev. On leaves of Trifolium hybridum, T. carolinianum. Auburn.

Uromyces eagrostidis Tracy. On Eagrostis tenuis. Auburn, 2223, Oct. 11, 1891 (Duggar). Dr. Dietel sends the following note: "I find the spores in this specimen somewhat larger than the measurements given by Tracy, but otherwise the description agrees exactly with this fungus so that I have no doubt as to the correctness of the determination." No. 2095, uredo stage only, Sept. 10, 1891 (Atkinson).

Uromyces euphorbiae Cke. & Pk. On leaves of Euphorbia preslii. Auburn, Oct. and Nov. 1891 (Duggar).

Uromyces appendiculatus (Pers.) Link. On leaves of cultivated pole beans, Phaseolus vulgaris. Auburn, July–Oct. 1890.

Uromyces rhynchospora Ellis & Ev. On Rhynchospora glomerata. Auburn, July–Oct. 1890–91 (Duggar and Atkinson), Nos. 1316, 2089, 2286 (Det. Dietel).

Uromyces polygoni (Pers.) Fuckel. Auburn, 1189, on leaves of Polygonum setaceum, June, 1890; 2127, Sept. 8, 1891 (Atkinson); 2029, P. perennis, Aug. 18, 1891, also from Gallion 1892, (Duggar).

Uromyces andropogonis Tracy. On Andropogon virginicus. Auburn, 2003, 2003b, 2107, Aug–Dec. 1888–1891, (Det. Dietel).

Uromyces spermacoces (Schum.) Thüm. On Diodea teres. Forming prominent black sori on the leaves, or by confluence large patches on the stems. 1333, Auburn, July, 25, 1890; 1286 (uredo) Shorters, July 16, 1890.

Uromyces lespedezae (Schw.) Pk. Sori thickly scattered on the leaves. Auburn, autumn, 1889–1891. 1589, Lespedeza sessiflora; 2309 L. polystacha, 1079 L. procumbens; 1570 L. repens; 1584 L. stuvei; also on L. virginica, capitata and violacea.

Uromyces hyperici (Schw.) Curt. On leaves and stems of Hypericum mutilum. Auburn, 2349, Nov. 15, 1891 (Atkinson); 2349a, all three stages, same date (Duggar); 2286, Oct. 29, 1891 (Duggar); *1593, Prague* Junction, Sept. 6, 1890.

Uromyces hedysari-paniculati (Schw.) Farl. On leaves of Desmodium sp. 1596 LaPine, Sept. 8, 1890; 2070 D. strictum? Auburn, Aug. 29, 1891; 2148 D. paniculatum, Sept. 13, 1891.

Uromyces terebinthi (DC) Wint. Forming numerous minute black sori on the under side of the leaves of Rhus toxicodendron var. radicans. Uniontown 1261, July 2, 1890; Auburn, 2289, Oct. 28, 1891.

Uromyces junci (Desm.) Tul. On stems of Juncus sp. Auburn, 2065, 2328, Aug. and Nov., 1891.

Uromyces minutus Dietel n. sp. Sori on the under side of the leaves, small, punctiform, or elongate. Uredo-sori surrounded by the ruptured epidermis, cinnamon brown. Uredospores elliptical or spherical, 15–19 x 11–15 μ, brown, spinulose. Teleuto-sori naked, black; teleutospores oval or pyriform, 20–25 x 10–17μ, epispore smooth, brown, at the apex thickened; stalk longer than the spore, permanent. On leaves of Carex sp. 2048, Auburn, Aug. 27, 1891 (Duggar).

Uropyxis amorphae (Curtis) Schroeter. On leaves of Amorpha fructicosa? or herbaceum? Shorters, 1295, July 16, 1890.

Aecidium pteleae B. & C. On leaves of Ptelea trifoliata. Wright's Mill, near Auburn, 2010, July 8, 1891 (Duggar and Newman).

Aecidium impatientis Schw. On leaves of Impatiens fulva. Auburn, 1116, Apr. 22, 1890. Parkinson's Mill, Spring, 1890.

Aecidium euphorbiae Gmel. On leaves of Euphorbia preslii, Auburn, 2360, Nov. 11, 1891.

Aecidium sambuci Schw. Deforming stems and leaves of Sambucus canadensis. Auburn, Apr., 1892.

Aecidium asteratum Schw. On Aster and Solidago. Auburn, 1891-92.

Aecidium plantaginis Ces. On leaves of Plantago virginica? Auburn, 1063, Mar 9, 1890.

Aecidium epilobii DC. On leaves of Oenothera sinuata. Auburn, 1111, 1112, Apr.-May, 1892, common.

Aecidium houstoniatum Schw. On leaves of Houstonia patens. Auburn, 1071, Feb. 16, 1890. Common in the winter. The aecidia are amphigenous but generally epiphyllous, the spermagonia occurring on either side. The aecidia also seem to be somewhat smaller than specimens of this species in 1422, E. & E. N. A. F., and the margins not so strongly recurved. Otherwise the description agrees. The plants of H. patens are very short during the winter in places where the aecidia were collected, the leaves being very close to the ground. This may have had some influence in conjunction with the season of the year in the general occurrence of the aecidia on the upper surface of the leaf.

Caeoma agrimoniae Schw. On leaves of Agrimonia parviflora. Auburn, 2301, Nov. 2, 1891 (Duggar).

Caeoma interstitiale Schlecht. On leaves of Rubus trivialis, 1933, May, 1889. (This is the aecidial stage of Puccinia peckiana).

Peridermium cerebrum Pk. On trunks of pine. Auburn.

Peridermium orientale Cke. On leaves of Pinus serotina. Auburn, 1105, spring, 1891.

Uredo quercus Brond. Auburn, deforming leaves of various species of oak, usually of young sprouts from stumps or injured trees. 2176, Quercus stellata, Oct. 3, 1891; 2151, Q. alba, Sept. 13, 1891 (Atkinson); 2305, Q. aquatica, Nov. 5, 1891 (Duggar); also 2273, Q. sp., Oct. 25, 1891.

Uredo fici Cast. On leaves of Ficus carica, common, Auburn, Mobile, Uniontown.

Uredo azaleae Schw. On leaves of Rhododendron nudiflorum? Auburn, 2346, Nov. 9, 1891 (Benton).

Uredo mülleri Schröter. On leaves of Rubus villosus. Auburn, autumn. (Det. Dietel).

Uredo muhlenbergiae Dietel n. sp. ad. int. Sori on both sides of the leaves on purple or brown spots, oblong, ochraceous brown. Spores elliptical or spherical, 26–32 x 24–30, brownish yellow, spinulose, with four germ pores. (Puccinia windsoriae Schw. on leaves on M. mexicana has smaller uredospores. Uromyces peckianus also on Muhlenbergia from Mexico has smaller uredospores. Whether this species belongs to an already named species cannot be definitely determined without the teleutospores). Auburn, 1586. On leaves of Muhlenbergia diffusa, Aug. 31, 1890.

Uredo alabamensis Dietel n. sp. Sori mostly on the under side of the leaves, single ones upon the upper side, short linear, surrounded by the ruptured epidermis, brown, at the apex very intensely colored, spinulose, with four germ pores. In the uredo sori are numerous paraphyses which are broadened into a knob at the upper end. Auburn, 2231. On leaves of Sorghum nutans, Oct. 14, 1891 (Duggar).

GASTEROMYCETES.

Arachnion album Schw. Auburn, 1890, on ground.

Bovistella ohioensis (E.& M.) Morg. Auburn, common, on ground.

Cyathus vernicosus (Bull.) DC. Auburn, 1371, on charred wood, etc. 1890.

Geaster triplex Jungh. Auburn, 1725, in shady places, 1890.

Geaster hygrometricus Pers. Auburn, 1892, Feb. 22, 1891. 1412, on ground in open woods.

Geaster limbatus Fr. Auburn, 1872, Feb. 22, 1891, on ground in open woods.

Geaster lageniformis Vit. Auburn, 1411, 1477, 1526a, Aug. 1890 and at other times.

Geaster saccatus Fr. Auburn, 1864, 1725a, 1891.

Lycoperdon rimulatum Pk. Auburn, 1424.

Lycoperdon calyptriforme B. & C. Auburn, 1473, July, 1890.

Lycoperdon pedicellatum Pk. Auburn, 1875, on ground in open woods, Feb. 22, 1891.

Lycoperdon excipuliforme Scop. Auburn, 1512, etc., common.

Lycoperdon cepaeforme Bull. Auburn, 1451, etc., 1890.

Lycoperdon eximium Morg. Auburn, 1478, 1890.

Lycoperdon wrightii B. & C. Auburn, 1498, 1890.

Lycoperdon pusillum Fr. Auburn, 1452, 1890.

Lycoperdon perlatum (Pers.) Fr. Auburn, 1404, 1890.

Lycoperdon echinatum Berk. Auburn, 1368, 1890.

Lycoperdon fuliginosum B. & C. ? Auburn, 1481, on decaying logs, Aug. 4, 1890.

Lycoperdon separans Pk. Auburn, 1413, 1890.

Lycoperdon turneri E. & E. Auburn, 1874, on ground in open woods, Feb. 22, 1891.

Lycoperdon cyathiforme Bosc. Auburn.

Nidularia alabamensis Atkinson n. Sp. Peridium spherical sessile, reddish brown, roughened, 4–5 mm in diameter, irregularly dehiscing by the breaking into fragments of the upper portion exposing the peridiola which completely fill it, no "rooting" threads. Peridiola lenticular, shining dark or blackish brown, barely 1 mm diameter, corrugated, hard, filled with a whitish pulpy material which is composed of stout irregularly flexous or branched knotty, strongly tuberculose threads with which the spores are mixed. Spores obovate, hyaline, 4-6 x 3-4μ. On decaying wood. Auburn, July, 1890. Differs from N. farcta.

Octaviana stephensii (Berk.) Tul. var. ravenelii Berk. Auburn, 1446a, 1890.

Polysaccum pisocarpum Fr. Auburn, 1516, on ground in lawns.

Rhizopogon rubescens Tul. Auburn, 1890, on ground.

Scleroderma geaster Fr. Auburn, 1726, on ground. One specimen appears to dehisce in a reticulate rimose fashion, the lower portion later in a stellate manner recurving.

Scleroderma vulgare Hornem. Auburn, on ground.

Scleroderma verrucosum (Bull.) Pers. Auburn, 1525, on ground, Aug. 1890.

TREMELLINEAE.

Exidia truncata Fr. on dead stems of Vitis rotundifolia. Auburn, 2391, June 3, 1892.

Hirneola auriformis (Schw.) Fr. On decaying branches. Auburn, 1647.

Tremella virens Schw. On decaying oak branches. Auburn, no 1882.

Tremella mesenterica Retz. On decaying wood. Auburn, 1644, 2380, autumn, 1891.

DACRYOMYCETACEAE.

Dacryomyces epiphyllus? On leaves of Arundinaria tecta. Auburn, 2327, Nov. 3, 1891.

Dacryomyces azaleae Schw. On dead branches. Auburn, 1643, 1890.

Dacryomyces aurantia (Schw.) Farl. On dead wood, 1450, Auburn, 1890.

Guepinia spathularia (Schw.) Fr. 1642, Auburn, 1890.

AGARICACEAE.

Amanita spreta Pk. In open woods, Auburn, 1896, July, 1890.

Amanita ravenelii B. & C. Auburn, 1492, Aug. 1890.

Amanita pantherina DC. Auburn, 1376, 1509, 1441, 1842, July and Aug. 1890.

Amanita phalloides Fr. Auburn, 1527, Aug., 1890.

Amanita caesarea Scop. Auburn, 1379, July and Aug. 1890.

Amanita solitaria Bull. Auburn, 1841, Aug. 1890. Pileus 20 cm diameter, stipe 15 cm long by 3 cm in diameter.

Amanitopsis nivalis Pk. Auburn, 1491, Aug. 1890.

Amanitopsis agglutinosus (B. & C.) Sacc. 1493, Auburn, 1890.

Amanitopsis vaginata (Bull.) Roz. Auburn, 1638, 1623, 1490, July and Aug. 1890.

Armillaria mellea Vahl. Auburn.

Armillaria bulbigera Alb. & Schw. Auburn, 1838, Dec. 1890.

Clytocybe ectypa Fr. Auburn, 1739, Aug. 1890.

Collybia radicata Relh. Auburn, 1894, growing from buried roots, July, 1890.

Hygrophorus cantherellus Schw. Auburn, 1476, summer, 1890.

Lepiota excoriata Schaeff. Auburn, 1326, in grassy places and near gardens among weeds, July, 1890.

Lepiota subremota B. & C. Auburn, 1390, entirely yellow or white, annulus movable, easily falling away. In grassy fields and open woods, summer, 1890.

Lepiota americana Pk. Auburn, 1624.

Lepiota asprata Berk. Auburn, 1522, pileus dull white, darker on umbo, stipe darker. Grassy places, Aug. 1890.

Omphalia grisea Fr. Auburn, 1400, on ditch bank in sandy soil. 1890.

Omphalia subpellucida B. & C.? Auburn, 1732, summer, 1890.

Panus stipticus (Bull.) Fr. Auburn, 1895, on dead branches, Aug. 1890.

Panus torulosus Fr. Auburn, summer, 1891.

Panus dorsalis Bosc. 1840, summer, 1890.

Pleurotus sapidus Kalch. Auburn, 1494, on dead branches of trunks, Aug. 1890.

Pleurotus chioneus Pers. Auburn, 1362, on decaying wood, small about 1 cm in diameter. Summer, 1890.

Pleurotus subbarbatus B. & C. Auburn, 1482, 1641, July, 1890.

Tricholoma brevipes Bull. Auburn, summer, 1891.

Crepidotus dorsalis Pk. Auburn, 1860, summer, 1890.

Agaricus silvaticus Schaeff. Auburn, 1496, in woods, Aug. 1890.

Agaricus placomyces Pk. Auburn, 1440, in woods, July, 1890.

Agaricus campestris Linn. Auburn, 1444, 1456, 1430, 1708, in grassy fields and lawns, autumn, 1890.

Hypholoma fasciculare Huds. Auburn, 1506, on ground, summer 1890.

Hypholoma sublateritium Schaeff. Auburn, 1839, in clusters by side of decaying log. Dec. 1890.

Psathyrella disseminata Pers. Auburn, 1504, on ground in cultivated fields. July 1890.

Stropharia melasperma Bull. Auburn, 1395, summer 1890.

Cantherellus cibarius Fr. Auburn, 1340 (pileus lobed irregular), 1347, 1609, Aug. 1890.

Cantherellus petersii B. & C. Auburn, 1495, July 1890.

Cantherellus infundibuliformis (Scop.) Fr. Auburn, 1349, pileus very much lobed and irregular, Aug. 1890.

Coprinus plicatilus (Curt.) Fr. Auburn, 1485, July 25, 1890.

Coprinus atramentarius (Bull.) Fr. Auburn, autumn, 1890.

Lactarius insulsus Fr. Auburn, on ground, summer 1891.

Lactarius deliciosus (L.) Fr. Auburn, 1849, 1850, on ground in open woods, Oct. 19, 1890.

Lactarius theiogalus (Bull.) Fr. Auburn, 1529, on ground July, 1890.

Lactarius volemus Fr. Auburn, 1622, on ground.

Lactarius indigo (Schw.) Fr. Auburn, 1646, on ground in damp woods near stream, Aug. 1890.

Lactarius affinis Pk. Auburn, 1851, on ground, Oct. 19, 1890.

Lactarius pergamenus (Swartz) Fr. Auburn, 1620, in woods on ground, Aug. 1890.

Lactarius piperatus (Scop.) Fr. Auburn, 1464, in woods on ground, July, 1890.

Lactarius fuliginosus Fr. Auburn, 1629.

Lactarius lignyotus Fr. Auburn, 1630.

Lentinus lepideus Fr. Auburn, 1720, etc. in woods, Aug. 1890.

Lentinus lecomtei Fr. Auburn, 1888, 2385, on dead trunks, Feb. 22, 1891.

Lenzites cookei Berk. Auburn, 1857, autumn, 1890.

Lenzites berkelyi Lev. Auburn, 1635.

Lenzites betulina (L.) Fr. Auburn, 1890, on dead trunks, Feb. 22, 1891.

Marasmius semiustus B. & C. Auburn, 1477, on decaying grass stems, July, 1890.

Marasmius hinnuleus B. & C.? Auburn, 1474, July 1890.

Marasmius atro-rubens Berk. Auburn, 1394, summer, 1890.

Marasmius curreyi B. & R. Auburn, 2387, on dead blades of Panicum sanguinale, Aug. 3, 1891.

Marasmius opacus B. & C. Auburn, 1479.

Marasmius salignus Pk. Auburn, 1396, summer, 1890.

Marasmius putredinus B. & C. Auburn, 1471, on rotting wood, 1890.

Marasmius capillaris Morg. Auburn, 1480, July, 1890.

Marasmius anomalous Pk. Auburn, summer, 1890.

Russula adusta Pers.? Auburn, 1625.

Russula foetens (Pers.) Fr. Auburn, 1632, 1736, on ground in woods, Aug. 1890.

Schizophyllum commune Fr. Auburn, 1151, on dead branches.

POLYPORACEAE.

Boletus rubinellus Pk. Auburn, 1417, in woods on ground, Aug. 1890.

Boletus russellii Frost. Auburn, 1501, summer, in woods, on ground. 1890.

Boletus edulis Bull. Auburn, 1465, on ground in woods, Aug. 1890.

Boletus griseus Frost. Auburn, 1438, summer, 1890.

Boletus subluteus Pk. Pinkish variety. Auburn, 1434, July, 1890.

Boletus albus Pk. Auburn, 1702, Aug. 1890.

Boletus hemichrysus B. & C. Auburn, 1437, at base of stump, in open woods July 1890.

Boletus pallidus Frost. Auburn, 1701, on ground in woods, July 1890.

Boletus affinus Pk. Auburn, 1351, summer, 1890.

Boletus chrysenteron Fr. Auburn, 1616, in open woods on ground, summer 1890.

Boletus granulatus Linn. Auburn, 1433, on ground under pines in border of woods, July 1890.

Boletus brevipes Pk. Auburn, on sandy soil under pines, Dec. 20, 1891.

Daedalea confragosa var. lenzitoides Pk. Auburn, 1706, on dead branches, 1890.

Favolus tessalatus Mont. Auburn, 2397, on dead branches of Acer, 1891.

Fomes lucidus (Leys.) Fr. Auburn, 1710.

Fomes annosus Fr. Auburn, 1712, on roots of decaying stumps, 1890.

Fomes carneus Nees. Auburn, on dead trunk ?

Fomes curtisii B. & C. Auburn, 1715, on dead stump, 1890.

Fomes reniformis Morg. Auburn, 1345, on dead trunk, 1890.

Polyporus adustus (Willd.) Fr. Auburn, 1717, on dead trunk, 1890.

Polyporus arcularius (Batsch.) Fr. Auburn, 1369, on dead branches, 1890.

Polyporus dichrous Fr. Auburn, 1866, dead branches.

Polyporus gilvus Schw. Auburn, 1399, on dead trunks and branches.

Polyporus hispidoides Pk. Auburn, 1604, in pine woods at base of tree trunk ; pileus 15 cm. broad, stipe 4 cm. long by 3 cm. in diameter. Aug. 1890.

Polyporus imbricatus (Bull.) Fr. 1386, Auburn, 1890.

Polyporus pilosus Morg. Auburn, 1633, on trunk of conifer, 2 cm. in diameter, Aug. 1890.

Polyporus varius Fr. Shorters, 1332, on roots of tree stump, July 16, 1890.

Polystictus biformis Klotz. Auburn, 1468, on dead trunks.

Polystictus barbatulus Fr. Auburn, 1876, on branches of Pinus australis, Feb. 22, 1891.

Polystictus cinnabarinus (Jacq.) Fr. Auburn, 1852, on dead trunks, 1890.

Polystictus crocatus Fr. Shorters, 1334, on trunks, July 16, 1890.

Polystictus hirsutus Fr. Auburn, 1891, on dead branches, Feb. 22, 1891.

Polystictus pergamenus Fr. Auburn, 1863, etc., on dead branches, 1890.

Polystictus versicolor (Linn.) Fr. Auburn, 1889, etc., on dead branches, Feb. 22, 1891.

Poria alabamae B. & C.? Auburn, 1353, on dead branches, 1890.
Merulius confluens Schw. Auburn, 2388, on dead branches, Dec. 1891.

HYDNACEAE.

Hydnum atro-viridis Morg. Auburn, 1458, in woods, summer 1890.
Hydnum pulcherrimum B & C. Auburn, 1343, 1466, summer 1890.
Hydnum adustum Schw. Shorters, 1337, July, 1890.
Hydnum reniforme B. & C.? Auburn, 1631.

THELEPHORACEAE.

Craterellus cantherellus (Schw.) Fr. Auburn, 1617, July 1890.
Hymenochaete purpurea Cke. & Morg. Auburn, 1883, on dead branches, Feb. 22, 1891.
Thelephora candida (Schw.) Fr. Shorters, 1346, July 16, 1890.
Thelephora laciniata Pers. Auburn, 1004, in sandy places in old pine fields, July 27, 1890, autumn 1889.
Thelephora schweinitzii Pk. Auburn, 1640, 1738, autumn 1890.
Theplehora sebacea Pers. Shorters, 1339, enveloping dead and living small herbs, July 16, 1890.
Stereum albo-badium Schw. Auburn, 1884, 1885, on dead oak branches, Feb. 22, 1891.
Stereum leveilleanum B. & C. Auburn, 1886, on dead branches of hickory tree, Feb. 22, 1891.
Stereum versicolor (Sw.) Fr. Auburn, on dead branches, Feb. 22, 1891. Form fasciatum, Shorters, 1340, July 16, 1890.
Stereum bicolor Fr. Auburn, 1740.
Corticium lactescens Berk. Auburn, 2280, Nov. 2, 1891 (Duggar).

CLAVARIACEAE.

Clavaria palchra Pk. Auburn, 1470, on ground, 1890.

SPHAERIOIDEAE.

Actinonema rosae (Lib.) Fr. On leaves of cultivated rose, May 1890.
Coniothyrium setariae Atkinson, n. sp. Perithecia minute, immersed, ostiolate, 50μ in diameter. Spores narrowly fusoid with rounded ends, olive-fuliginous, inequilateral, 10–14 x 2–3μ. On dead stems of Setaria, Auburn, 1411, July 25, 1890.
Botryodiplodia juglandicola (Schw.) Sacc. On dead branches of Hicoria alba. On branches collected at the same time is Melanconis hicoriae Atkinson. Auburn, Jan. 1891.

Cicinnobolus cesatii DBy. On mycelium and conidial stage of various species of the Erysipheae. Auburn, 1890–91.

Cornularia persicae (Schw.) Sacc.

Periconia persicae Schw. Synop. Fung. Car. 1290.

Sphaeronema persicae (Schw.) Ellis N. A. F. 946.

Isariopsis pilosa Earle Bull. Torr. Bot. Club, XXIV, 30, 1897.

On dead branches or on dead bark of living branches of Prunus persica. Common at Auburn. This old species seems to be widely distributed and common in the eastern U. S. At least I found it very common in both North Carolina and South Carolina, at Auburn, and it is common here at Ithaca, N. Y. It may be found at almost any season of the year, and usually gives a loose velvety appearance to the branches when it is abundant. It seems to differ generically from any of the genera into which it has heretofore been placed, even from Cornularia, since the spores are borne inside an excipulum which is at the end of the stalk, and not at the ends of the thread which form the stalk as in Isariopsis.

Diplodia maura E. & E. On branches of Pirus communis. 1916, Mobile and Auburn, 1890.

Diplodia herbarum (Corda) Lev. On dead stems of Lactuca. 2411, Auburn, May 1, 1892.

Diplodia gossypina Cke. On old capsules of Gossypium herbaceum, 2142, Brundige Sept. 5, 1891. Spores elliptical, or oblong, or ovate-oblong, 22–30 x 12–14μ. Larger than measurements given by Cooke.

Hendersonia effusa B. & C. Forming large linear black patches more or less effuse, and sometimes broader by coalescence. On blades of Aristida purpurascens var. minor. 2215, Auburn, Oct. 11, 1891.

Hendersonia arundinacea (Desm.) Sacc. On dead stems of Chrysopogon nutans. 2432a, Auburn, Nov. 1, 1891 (Duggar).

Hendersonia erianthi Atkinson, n. sp. Perithecia scattered, immersed, erumpent, of coarse texture, 150–200μ. Spores oblong-elliptical, 3-septate, little constricted, 10–15 x 3–3.5μ, dark brown. Differs from H. donacis Sacc. Associated with Lophidium anomalum Atkinson. On dead stems of Erianthus, 2345, Nov. 12, 1891 (Duggar).

Hendersonia officinalis Atkinson, n. sp. Perithecia immersed, erumpent, usually on upper surface of the leaves, rupturing the epidermis into several clefts and appearing as a faintly colored body between the clefts with a prominent ostiolum. Perithecial wall fragile, colored near the ostiolum and difficult to distinguish from the dead cells of the host. Below the broadly conical apex, apparently only the stroma from which the basidia arise, the entire wall being of a delicate texture. Basidia hyaline, 20–25 x 2–3μ. Spores fu-

soid, elliptical, sometimes narrower below, straight or inequilateral, 18–25 x 5–7μ, mostly continuous, but a few 2-septate, not constricted, faintly fuliginous, or olivaceous. Spores probably young, otherwise referable to Stagonospora. On dead leaves of Sassafras officinalis, 2183, Auburn, July 29, 1891 (Duggar).

Hendersonia crataegicola Atkinson, n. sp. Spots obicular 1–3 mm., dry, dirty white above, duller below, bordered by a narrow and more or less raised dark line. Perithecia black, minute, 120–170μ, epiphyllous mostly, prominent, erumpent. Spores narrowly ovate, 3-septate, rarely 2-septate, not constricted, fuliginous, lower cell nearly hyaline, 8–12 x 3.5–4μ. On leaves of Crataegus flava, 2080, Auburn, Aug. 1890. Near H. piricola Sacc., on Pirus communis, which is said by Saccardo to be the pycnidial stage of Sphaerella lucillae, but spores narrower in proportion to length (vide Rab. F. E., 2155).

Phlyctaena gossypii Sacc. On dead stems of Gossypium herbaceum. Auburn, 1820a , Jan. 27, 1891.

Phoma subcircinata E. & E. On pods of Phaseolus vulgaris (butter bean) covering the pods with thickly scattered perithecia. Spores measure up to 10–12μ long; given as 5–6μ long by Ellis in specimens from P. lunatus from N. J. (Proceed. Acad. Nat. Sci. Phila. 158, 1893). Auburn, 2137.

Phoma lathyrina Sacc. Perithecia on stems, scattered or seriate, permanently veiled by the epidermis, depressed, convex, minute ostiolum 200–300μ in diameter. Spores 6–10 x 2–2.5μ, hyaline, oblong with pointed ends or navicular, when fresh 2-guttulate, straight or inequilateral. On stems of Dolichos sinensis, Auburn, 1006, Oct. 16, 1889.

Phoma gossypii Sacc. On dead stems of Gossypium herbaceum, Auburn, 1820b, Jan. 27, 1891. Associated with Phlyctaena gossypii Sacc.

Phoma gloeosporioides Atkinson. n. sp. Perithecia thickly scattered over the upper surface of the leaves, erumpent, black, prominent, broad and rounded apex, wall of very small parenchymatous cells, 200–300μ in diameter. Spores numerous, hyaline, oblong, pyriform, 1–guttulate, the plasma divided in the middle, sometimes sharp pointed below, resembling spores of certain species of Gloeosporium, 5–9 x 1.5–2μ. On dead leaves of Quercus falcata?, Auburn, 1104, Feb. 1890.

Phoma astericola Atkinson n. sp. Blackening the stems and leaves of Aster sp. Perithecia on stems immersed, apex emergent, black, shining, orbicular or elongate, wall black, variously sculptured on the outside by fine lines running in different directions caused by varying form of the cells. Spores ovate-elliptical, 12–17 x 5–7μ *granular.* Differs from P. iowana Sacc. Auburn.

Phyllosticta pirina Sacc. Forming small whitish spots on leaves of Pirus communis, Mathews, June 17, 1891. 1829, Gold Hill, on leaves of Pirus malus, Sept. 1890.

Phyllosticta catalpae E. & M. Forming circular pale brownish spots on leaves of Catalpa bignonioides. Auburn, 2431, Aug. 15, 1891.

Phyllosticta adusta E. & M. On seedling leaves of lemon (Citrus limon). Auburn, 1012, Oct. 19, 1889. Spores are longer than the measurements given by Ellis on leaves of Citrus aurantiaca from Florida.

Phyllosticta batatae Thüm. On leaves of Ipomoea batata. Auburn, 2168, Oct. 4, 1891.

Phyllosticta violae Desm. Form violae-tricoloris Sacc. On leaves Viola tricolor. Auburn, 1824, Jan. 29, 1891.

Phyllosticta gossypina E. & M.? On dead leaves of Gossypium herbaceum. Auburn.

Phyllosticta circumvallata Wint. On leaves of Liriodendron tulipifera. Auburn, 2420, July 18, 1892 (Richards).

Phyllosticta amaranti E. & K. On leaves of Amarantus retroflexus. Auburn, 2055, Aug. 5, 1891 (Duggar).

Phyllosticta phytolaccae Cke. On leaves of Phytolacca decandra. Auburn, 2421, July 18, 1892 (Richards).

Phyllosticta rhododendri West. On leaves of Rhododendron nudiflorum? Auburn, 2419, July 18, 1892.

Phyllosticta desmodii E. & E. On leaves of Desmodium sp. Auburn, June 28, 1892.

Phyllosticta leucocarpae Atkinson, n. sp. Spots amphigenous, suborbicular, white, dry, thin, with a narrow brown border. Perithecia amphigenous, black, flattened, prominent, giving a minutely black dotted appearance to the spots, 120–140 μ. Spores cylindrical hyaline, 10–14 x 3–4 μ. Leaves of Pirus leucocarpa. Pike Roads 2018, July 9, 1891.

Phyllosticta maclurae E. & E. On leaves of Maclura aurantiaca. Auburn, August, 1893 (Duggar).

Phyllosticta acericola C. & E. Forming orbicular dark gray or light colored spots on leaves of Acer rubrum. Perithecia epiphyllous spores 7–9 x 5–7μ granular. Auburn, No. 1996.

Phyllosticta siliquastri Sacc. On leaves of Cercis canadensis. Wright's Mill, 2030, Aug. 7, 1891 (Duggar and Newman).

Septoria galliorum Ellis. Spores 20–25 x 1μ, perithecia black, prominent. On dead stems of Houstonia patens. Auburn, Feb. 16, 1890. Sometimes associated with Aecidium houstoniatum.

Septoria lepidiicola E. & M. Forming small circular light colored spots on leaves of Lepidium virginicum? Auburn, 1096, Feb. 9, 1890.

Septoria lactucae Pass. On leaves of Lactuca lucophaea. Auburn, 1956, June 26, 1891 (Newman).

Septoria sonchifolia Cke. Forming numerous indefinitely bordered brownish orbicular spots. Perithecia immersed, only apex erumpent, membranaceous, delicate, 100–150μ, wall light yellow except aronnd the ostiolum where it is blackish. Spores 20 x 1μ. Otherwise as described. On leaves of Sonchus oleraceus. 2410, Auburn, 1892.

Septoria bromi Sacc.? On leaves of Elymus, with Leptosphaeria elymi. Auburn, 1175c, July 5, 1890.

Septoria xanthii Desm. Forming small indefinite, pale spots on leaves of Xanthium strumarium. Uniontown, 1256, July 11, 1890.

Septoria virgaurae Desm.? On leaves of Solidago. Auburn.

Septoria violae West. Forming circular dark brown spots, with a lighter center, on living leaves of Viola primulaefolia. Shorters, 1299, July 16, 1890.

Septoria sambucina Pk. On living leaves of Sambucus canadensis, forming dark spots, the larger ones with a light center. Auburn, 2063, Aug. 24, 1891 (Duggar).

Septoria sonchina Thüm. Forming purple red spots on living leaves of Sonchus oleraceus. Auburn, 1899, Feb. 25, 1891 (Benton).

Septoria rubi West. Forming irregular light brown spots on leaves of cultivated Rubus. Auburn, 1563, Aug. 8, 1890.

Septoria rubi var. alba Pk. Forming small white spots on living leaves of Rubus trivialis? Associated with Cercospora rubi and Caeoma interstitiale. Mobile and Auburn. Apr. 1891.

Septoria oenotherae West. Forming circular spots on living leaves of Oenothera sinuata (not Oe. biennis as stated in Jour. Elisha Mitch. Soc. X, II, 77, 1893). Auburn.

Septoria graminum Desm. Forming brown, irregular, elongate, spots on living leaves of Panicum sanguinale, or involving the larger part of the terminal portion of the leaf. Auburn, 1943, Aug. 29, 1891.

Septoria erechtites E. & E. Forming brown, usually angular spots on living leaves of Erechtites hieraciafolia. Auburn, 2162, Sept. 10, 1891 (Duggar).

Septoria cerastii Rob. et Desm. On dead or languid leaves of Cerastium arvense. Auburn, 1915, March 25, 1891.

Septoria brunellae E. & H. Forming circular grayish or light brown spots seated in larger brown areas, on living leaves of Prunella vulgaris. Shorters, 1309, July 16, 1890.

Septoria speculariae B. & C. On languid leaves of Specularia perfoliata. Auburn, 1108, Mar. 28, 1890.

Septoria dianthi West. Forming purple bordered ochraceous spots on living leaves of Dianthus. Auburn, Mar. 20, 1891.

Septoria alabamensis Atkinson. Forming indefinite spots occupying irregular areas on living leaves of Nepeta glechoma. Auburn, 1825, Jan. 29 and Feb. 27, 1891.

Septoria fraxini Desm. Forming brown indefinite spots on living leaves of Fraxinus platycarpus. Pike Roads, July 9, 1891.

Septoria confusa Atkinson n. sp. Spots small, circular, 2–3mm in diameter, center grayish brown, or whitish, with an indefinite reddish border. Perithecia few. Spores filiform, 1–3–septate, 25–35 x 2μ. On leaves of Jussiaea leptocarpa. Auburn, 1976, Aug. 24, 1891 (Duggar and Newman). Listed as S. jussiaeae E. & K., in Jour. Elisha Mitch. Sci. Soc. X, II, 77, 1893, but no description was ever published of this name.

Sphaeronema corneum E. &. E. In orbicular dark brown spots on languid leaves of Oenothera sinuata. Agrees well with the description of this plant, except that the spores are 5–8 x 1.5μ, straight or more usually inequilateral. Auburn, 1953, July 26, 1891.

Stagonospora paspali Atkinson n. sp. Spots elliptical or irregular with a purple border and a minute central ochraceous whitish area, sometimes confluent. Spores hyaline, 24–28 x 7—9μ, 2–septate, 3–guttulate when young, oblong to elliptical, with broadly rounded ends. Perithecia globose flattened, seated on the border of the white spots in the darker area. On leaves of Paspalum laeve. Auburn, 1941, July 18, 1891 ; Spores in this specimen measure a little smaller. Wright's Mill, on Tricuspis sessleroides, 2004, July 11, 1891 (Duggar).

Vermicularia circinans Berk. On Allium, cultivated. Auburn.

EXCIPULACEAE.

Amerosporium oeconomicum E. & T. Forming brownish orbicular spots on living leaves of Dolichos sinensis. Auburn, 1557, July 22, 1890 (Atkinson); 2207, Oct. 1, 1891 (Duggar).

Dothichiza serotina Atkinson n. sp. In large dead area occupying one half of the leaf. Perithecia hypophyllous, black erumpent, appearing as numerous black points, 50–80μ, in diameter, at last broadly opened, margin more or less recurved. Spores cylindrical continuous, hyaline, 10–14 x 1.5–2.5μ. On leaves of Prunus serotina. Auburn. Sometimes associated with Discosia artocreas. Very different from D. padi on branches of Prunus padus in Arduenna.

Schizothyrella hysteroides Atkinson n. sp. Perithecia 1–2 mm. in diameter, immersed, erumpent, membranaceous, in drying somewhat collapsed and fluted, brown, obconic, laterally compressed by the longitudinally split epidermis of the host, so that it appears

rimose, margin incurved when dry, disk pale. Perithecia rarely resting by the obconic bases on the epidermis, then not hysteroid, margin in all sometimes irregularly fissured. Spores filiform, septate, curved or flexuous, hyaline, 80–120 x 2μ; finally separating into segments of variable lengths which are 1–3 septate. On dead culms of Chrysopogon nutans. Auburn, 2439, Nov. 1, 1891 (Duggar).

LEPTOSTROMACEAE.

Entomosporium maculatum Lev. On living leaves of Cydonia vulgaris. Gold Hill, 1831, Sept. 1890.

Discosia artocreas (Tode) Fr. On dead leaves of Prunus serotina. Spots large, irregular, blackish underneath bordered by a darker line. Auburn, July 31, 1891 (Duggar); 2000a, on leaves of Acer rubrum associated with Rhytisma acerinum, July 22, 1891.

Discosia rugulosa B. & C. On dead leaves of Hicoria alba. Spores nearly cylindrical, straight or curved, 12–15 x 1.5–2.5μ. Setae arising obliquely from the abruptly pointed ends, 10–15μ long. Auburn, 1969, July 18, 1891 (Newman).

Leptothyrium cylindrium Atkinson n. sp. Spots broadly elliptical, grayish white, bordered by light brown. Perithecia amphigenous, dimidiate, black, astomate, opening by a pore or variously cleft, longitudinally radiate, 300–400μ, depressed. Spores cylindrical with abruptly narrowed ends, hyaline, straight or little curved, 18–25 x 3.5–4μ. On leaves of Arundinaria tecta, Auburn, 1088, autumn 1889. Near L. subtectum Sacc.

Leptothyrium dryinum Sacc. Forming brownish irregular spots on living leaves of Castanea pumila, 1569, Aug. 11, 1890; also on leaves of Hicoria alba, 1977, July 24, 1891 (Duggar and Newman). Auburn.

Melasmia acerina Lev. Forming black suborbicular rugulose spots, surrounded by a pale yellowish indefinite border, on living leaves of Acer rubrum. Auburn 2150, Sept. 13, 1891.

Melasmia setariae Atkinson n. sp. Spots epiphyllous, elliptical-oblong, small, confluent or thickly scattered over a large part of the leaf. Continuous membrane covering several perithecia or sporogenous groups, composed of layers of dark brown angular cells, 3–4μ in diameter. Sporogenous stroma occupying and completely filling the cavity of the epidermal cells. Spores oblong-elliptical, with rounded ends, hyaline, 12–14 x 2.5–3μ. Basidia short, colored. On living leaves of Setaria glauca. Auburn, 2184, Sept. 27–29, 1891.

Melasmia quercuum Atkinson n. sp. Stroma black, orbicular, thin, crustaceous, 2–3mm; acervuli irregularly dehiscing. Spores hyaline to olivaceous, broadly fusoid, curved 20–30 x 7–8μ.

Occasionally seated in the stroma are broadly conical shining perithecia which contain minute asci 35–40 x 8–10; spores in the same not developed. This may be the stylosporous stage of Rhytisma tostum B. & C., which is reported from Alabama on Q. lancifolia. R. tostum B. & C., Rav. F. Am. 177, possesses sterile perithecia in concentric rings, forming circular groups, but there is no continuous stroma as in the specimens here described on Q. phellos. The size and shape of the spores suggests R. erythrosporum B. & C. on leaves of Q. virens from California but they are not borne in asci. Auburn, 2081, on leaves of Q. phellos.

Melasmia gleditschiae (Lev.) Atkinson.
Sacidium gleditschiae Lev. Ann. sci. nat. p. 64, 1845.
Leptostroma hypophyllum B. & Rav. F. Car. III, 45.
Melasmia gleditschiae E. & E. Jour. Mycol. 45, 1888.
Melasmia hypophylla (B. & R.) Sacc. Syll. Fung. X, 419, 1892.
On leaves of Gleditschia tricanthos. Auburn, 2081, autumn, 1889.

Piggotia fraxini B. & C. Forming minute black stromata on the under side of the leaves of Fraxinus. Auburn, 2023, autumn, 1890.

MELANCONIEAE.

Colletotrichum gossypii Southworth. On cotyledons, stems, leaves and fruit of Gossypium herbaceum. Generally distributed throughout the cotton growing region.

Colletotrichum lindemuthianum (Sacc. & Mag.) Scribner. On leaves, stems and pods of Phaseolus vulgaris. Auburn, 2056, Aug. 6, 1891.

Colletotrichum lineola Corda. On leaves of Sorghum vulgare. Auburn, 1550, July 1890. Numerous acervuli in broadly elliptical spots; setae single, or few in a tuft or effuse covering large areas. Conidia 25–35 x 4. On Sorghum halapense spots small, purple bordered. On dead leaves of S. halapense spots not evident, 1576, Wright's Mill, July, while at same place on living leaves spots evident, 1577; 2087a, Montgomery, Sept. 8, 1891; 1962, on Panicum maximum, agrees with specimens on S. halapense but setae longer, 60–100μ. The setae agree with those of Vermicularia sanguinea E. & E., but spores longer than given in description, and no perithecia present. This is suggested by Saccardo as the young state of a Vermicularia (III, p. 376). Spots sometimes occupying large areas on the margin of the leaf.

Colletotrichum jussiaeae Earle. Forming purple bordered yellowish circular, white, arid, spots on the leaves of Jussiaea decurrens. Auburn, 2022, Aug. 27, 1891.

Cylindrosporium padi Karst. On leaves of Prunus serotina, Auburn, July 3, 1891; also on leaves of Prunus angustifolia, Uniontown, July, 1890.

Cylindrosporium minor E. & K. Forming indefinite brownish spots on leaves of Fraxinus platycarpus? Pike Roads, July 9, 1891.

Cylindrosporium celtidis Earle. On leaves of Celtis mississippiensis, 2351, Montgomery, July, 1891.

Cylindrosporium saccharinum E. & E. On leaves of Acer rubrum, 2222, Oct. 14, 1891 (Duggar). Leaves pale, minutely spotted with light colored areas in which the acervuli are seated. Acervuli mostly hypophyllous, minute. Conidia exuding in long coiled gelatinous masses, curved or rarely straight, 25–30 x 3–4μ, 3–septate. Agrees well but spores shorter and acervuli not evident on upper surface.

Cylindrosporium ulmicolum E. &. E On leaves of Ulmus americanus. Auburn, 2260, Oct. 23, 1891. In minute yellowish spots scattered over the leaf; cirrhi hypophyllous, prominent, yellowish.

Cylindrosporium rubi E. & E. In minute spots on the upper side of leaves of Rubus, 1252, Uniontown, July 11, 1890.

Cylindrosporium steironemae Atkinson n. sp. Forming brownish orbicular spots 3–6 mm in diameter, usually with a lighter center. Spores 30–70 x 1.5–2μ, faintly 3–5–septate, curved, terete, issuing in long gelatinous threads. Acervuli 100–120μ in diameter. On leaves of Steironema. 2404, Auburn, May 9, 1892.

Cylindrosporium gnaphalicolum Atkinson n. sp. Spots small irregular, or small and seated on pale areas, black. Acervuli amphigenous, large, irregular, elevating the epidermis. Spores vermiform, 50–90 x 2.5–3μ, 6–15–septate. On living leaves of Gnaphalium sp. Auburn, 1974, July 24, 1891 (Duggar & Newman).

Darluca filum (Biv.) Cast. On various Uredineae, as Coleosporium, Uromyces, Puccinia, etc. Auburn, Shorters.

Gloeosporium septorioides Sacc. Forming dark bordered ashen gray spots on living leaves of Quercus aquatica. Auburn, 2424, Aug. 26, 1892 (Richards).

Gloeosporium fructigenum Berk. On fruit of Pirus malus. Auburn, 2076, Aug. 24, 1891.

Gloeosporium serotinum E. & E. On leaves of Prunus serotina, affecting leaves which are attacked by Exoascus farlowii. Auburn, Apr. 1891. The leaves in Ellis N. A. F. which have type specimens of this Gloeosporium were probably first deformed by this same Exoascus.

Gloeosporium fusarioides E. & K. On living leaves of Asclepias sp. Forming orbicular spots 2-3 mm. in diameter, which are amphigenous, light colored with a dark border. Spores mostly 20–25μ

long. While the leaf spots do not agree well with the description, the spores agree well with those of Gloeosporium fusarioides on Asclepias syriaca, N. A. F. 3074. Auburn, 1274.

Gloeosporium quercinum West. Forming minute spots on leaves of Quercus. Auburn, Sept. 4, 1890.

Gloeosporium vexans Atkinson n. sp. On stems of Melilotus alba. Acervuli thickly scattered appearing to the eye as small dark points, in age depressed. Spores oblong, rounded at the distal end, abruptly narrowed at lower end into a V-shaped point. Sometimes slightly broader at the lower end, or narrowed in the middle, continuous. Near Gloeosporium medicaginis E. & E. Auburn, 1773, Aug. 1890.

Gloeosporium ampelophagum (Pass.) Sacc. On leaves, branches, and fruit of cultivated Vitis. Auburn.

Melanconium sphaerospermum (Pers.) Link. On stems of Arundinaria tecta, Auburn, Sept. 9, 1891. Spores about 5μ in diameter, acervuli linear, 3–6 mm. long. The spores in this specimen are smaller than the measurements given in the description, and also smaller than in other specimens which I have seen on Arundinaria, but agree with the measurements as given for M. donacis Thüm, which was first described as a variety of M. sphaerospermum. This would seem to indicate that the difference between the two species can be accounted for by the variation in the size of the spores.

Pestalozzia flagellata Earle. On large orbicular or irregular, brown spots on leaves of Quercus nigra. Auburn, 2187, Sept. 26, 1891 (Duggar).

Pestalozzia minuta T. & E. On bark of Vitis. Auburn, 1836, Feb. 1891. Also on dead limbs of Hicoria alba, Jan. 1891.

Pestalozzia clavispora Atkinson n. sp. Acervuli minute, irregularly scattered, circular, immersed, sometimes epidermis blackened, opening by a minute pore, 150–200μ in diameter. Spores exuding in long black coils which later dissolve and form more or less effuse black areas, clavate, straight or inequilateral, 4-septate, 3 middle locules colored, middle one most intense, upper one next in intensity and lower one of the three least colored or nearly hyaline, lower end cell long conoid, upper one short conoid with 3 rarely 4 setae which are 25–35μ long, basidia short. Near P. longiseta Speg. On fallen leaves of Quercus rubra? Auburn, 2280, Oct. 3, 1891.

Pestalozzia turgida Atkinson n. sp. Acervuli in large blackish areas, discoid, circular, triangular or oblong, rupturing the epidermis in a stellate manner, margin at length more or less recurved, black. Spores broadly elliptical, inequilateral or curved, 22–28 x 8–12μ, 5-septate, 4 middle locules dark brown, end ones hyaline or fuligi-

nous, conoid. Seta 1, 8–15μ long, hyaline. Basidia 6–12μ long. On dead leaves of Crataegus. Auburn, Nov. 1, 1891.

Pestalozziella gossypina Atkinson n. sp. Acervuli broad, circular, depressed, immersed, slightly elevating the epidermis. Spores narrowly elliptical–cylindrical, straight or curved, hyaline, continuous, coarsely granular, 25–35 x 5–6μ. Cilia as many as eight, four near each end, two of these quite near the end, the other pair of each tetrad, ⅛–¼ the distance from the end. Number variable, perhaps because easily deciduous. Base of seta stout, then abruptly long ciliate. Cilia 20–30μ. On stems of Gossypium herbaceum. Auburn, 1820, Jan. 27, 1891.

Septogloeum profusum (E. & E.) Tr. & Earle. On living leaves of Ulmus alata? Pike Roads, 2430, July 9, 1891.

MUCEDINEAE.

Chromosporium aeruginosum (Corda) Sacc. Forming broadly expanded greenish olive patches on decaying wood. Auburn, 1002, Oct. 1889.

Aspergillus glaucus (L.) Link. On decaying leaves of Ipomoea. Auburn 1461a, July 23, 1890.

Monilia fructigena Pers. On fruit of Prunus persica. Auburn, 2418, July 1, 1892 (Richards).

Microstroma juglandis (Bereng.) Sacc. On living leaves of Hicoria alba. Auburn, 1123, Apr. 28, 1890; Uniontown, 1260, July 12, 1890.

Didymaria spissa Harkness. On living leaves of Solidago. Shorters, 1305, July 16, 1890. Spots amphigenous, usually hypophyllous, minute, sometimes elongate, downy white from the numerous tufts of hyphae and conidia. Hyphae in fascicles dense below, spreading above, flexuous, scarred at the angles where the conidia have been abjointed, 20–70 x 4–5μ, hyaline. Conidia acrogenous becoming pleurogenous by the continued growth of the hyphae, ovate–oblong–short lanceolate, hyaline, 1–2–septate, the larger ones 2–septate, 20–30 x 7μ. This differs in length of hyphae from those described by Harkness (Fung. Calif. p. 17) but the difference can be accounted for by the favorable conditions for growth in the Alabama specimens, the hyphae thus becoming longer and the large conidia 2-septate.

Ramularia liriodendri E. & E. Forming circular spots on living leaves of Liriodendron tulipifera. Auburn, Oct. 1889 (Benton).

Ramularia pratensis Sacc. On leaves of Rumex. Auburn, 1942, July 20, 1891 (Duggar). Typically forming suborbicular ochraceous spots with a darker border. Hyphae sometimes little branched.

Conidia not seen in chains but the ends on many show the scars of concatenate spores.

Ramularia areola Atkinson. Forming angular mildewed areas on leaves and bracts of Gossypium herbaceum. Auburn, 1790, Sept. 29, 1890. Quite common at Auburn and in other parts of the State.

Ramularia tulasnei Sacc. On leaves of cultivated strawberry. Auburn, 1795, Oct. 1890.

Ramularia virgaurae Thüm. Forming pale yellow elongate spots on leaves of Soildago. The conidia in the Alabama specimens are concatenate. Auburn (Wright's Mill), 1095, Mar. 27, 1890.

Rhinotrichum macrosporum Farl. Forming dirty white or ochraceous patches on dead capsules of Gossypium herbaceum. Auburn, 1775, Oct. 1890.

Rhinotrichum tenellum Berk. Forming whitish or cream colored patches on dead capsules of Gossypium herbaceum. Auburn, 1779, autumn 1890.

Olpitrichum carpophilum Atkinson. Forming cream colored or whitish patches on dead capsules of Gossypium herbaceum. Brundige, 2139, Sept. 5, 1891.

Sporotrichum globuliferum Speg. On dead hymenopterous insect. Auburn, 2318.

Tricothecium roseum (Pers.) Link. Common on decaying substances, leaves of Prunus persica, Ficus carica, carpels of Gossypium herbaceum, etc. Auburn.

DEMATIEAE.

Coniosporium gramineum (E. & E.) Sacc.? Forming blackish patches on culms of Arundinaria tecta. Conidia 3.5–5 μ, arising from a more or less determinate stroma. Auburn, 2386, 1891.

Coniosporium arundinellae E. & T. Forming minute black spots scattered over the surface of dead leaves or dead spots of the leaves of Arundinaria tecta. Auburn, Dec. 25, 1888; 1081, on dead blades of Panicum sp., Jan. 1890, spores 7–12 μ.

Cladosporium gramineum Corda. On dead leaves of Avena sativa. With Epicoccum neglectum. Auburn Jan. 22, 1890 (Newman).

Cladosporium gloeosporioides Atkinson n. sp. Hyphae in loose spreading tufts, irregularly flexuous, dark, nearly hyaline at apex, sometimes slightly notched, 80–120 x 4–5 μ. Conidia oblong, little pointed below, hyaline, strikingly like spores of certain species of Gloeosporium. Auburn, 2064, forming circular light brown spots on leaves of Ascyrum stans; Aug. 29, 1891 (Atkinson); 2170, circular or irregular spots on leaves, or extensive areas on stems of Hypericum mutilum, Sept. 2, 1891 (Duggar.). Very different from Gloeosporium cladosporioides.

Cladotrichum leersii Atkinson n. sp. Affecting large areas of the leaf which are dead and olive brown. Hyphae scattered or subfasciculate, 100–200 x 4–5 μ, or longer, flexuous, geniculate, at the knees enlarged and knotty, branched or simple. Conidia ovoid, hyaline, 1–septate, 10–13 x 9–11 μ, at the nodes and ends of the hyphae. On leaves of Leersia virginica. Auburn, 2051, Aug. 26, 1891.

Fusicladium pirinum (Lib.) Fuckel **var pyracanthae** Thüm. On fruit of Crataegus pyracantha. Auburn, 2058, July and Sept., 1891 (Duggar and Newman).

Fusicladium effusum var. carpineum E. & E. On upper surface of leaves of Carpinus carolinianus. Hyphae stouter than in specimens in Ell. & Ev. N. A. F., 2793, and in description, being 7–9μ, and conidia shorter, and more thinly effuse; otherwise agrees. Auburn, 2307, Oct. 30, 1891.

Piricularia grisea (Cooke) Sacc. Forming elliptical or suborbicular spots on leaves of Paspalum sp., 1950, July 11, 1890; 1960 on Panicnm sanguinale, July 1, 1891; 2024, Paspalum undulatum, July 25, 1891; 1531, German millet, Aug. 1890.

Piricularia euphorbiae (T. & E.)

Scolecotrichum euphorbiae T. & E. Bull. Torr. Bot. Club XXIII. On leaves of Euphorbia preslii. Auburn, 2013, (Wright's Mill) Aug. 7, 1891 (Duggar and Newman). This seems to agree better with Piricularia than with other related genera and resembles P. grisea generically. The conidia are hyaline and 1–3 septate, are at first acrogenous but become pleurogenous by the continued growth of the hyphae just as in Cercospora, Piricularia and other genera.

Polythrincium trifolii Kunze. On leaves of trifolium hybridum. Auburn, 1084, Wright's Mill, Feb. 1890 (R. S. Edwards).

Macrosporium nigricantium Atkinson. On leaves of Gossypium herbaceum. Common in various parts of the state, 1890–93.

Macrosporium cookei Sacc. Forming orbicular pale spots marked by darker concentric rings on leaves of Datura stramoneum. Auburn, 2027, Aug. 1891 (Duggar and Newman).

Macrosporium sarcinula Berk. On decaying fruit of Citrullus vulgaris. Auburn, 2390, Jan. 20, 1892.

Macrosporium solani E. & M.? On decaying red pepper (Capsicum annuum), Auburn, summer, 1890.

Macrosporium pirorum Cke. In spots on leaves of Pirus communis. Mathews, June 17, 1891.

Sporodesmium quadratum Atkinson n. sp. Forming thin effuse patches on under side of leaves of Crataegus sp., no tufts or sporodichia. Spores arising from the mycelium on short slender hyaline or fuliginous pedicels, irregularly globose, olive then very black, locules minute, middle septa often giving the spore a quad-

rate appearance as viewed from above. Montgomery (Highland Park), Oct. 10, 1891.

Periconia pycnospora Fr. On dead stems of Dolichos sinensis. Auburn, 1782a, Dec. 1890.

Harpocephalum Atkinson n. gen. Hyphae brown, erect, simple, or with a few very short branches, distal end sterile. Spores forming a head on one side of the hypha arising from the ends of a very short and compact tuft of branches. Spores catenulate, globose, continuous, brown.

Harpocephalum dematioides Atkinson n. sp. Hyphae 200–250 x 8–9μ, septate, dark brown, tapering to a slender point, curved or rarely sigmoid. Spores forming an irregular glomerule, catenulate, globose, at length minutely echinulate, light brown, 5–7μ in diameter. On leaves of Cinna arundinacea. Auburn, 2177, Sept. 15, 1891 (Newman).

Cercospora euphorbiaecola Atkinson n. sp. Spots amphigenous, suborbicular, greyish brown with a narrow raised black border. Hyphae mostly hypophyllous, arising from a blackish olive tubercle, simple, dilutely colored, slightly flexuous, 25–40 x 4μ. Conidia narrowly lanceolate, 80–120 x 3.5–4μ, faintly 5–10–septate, dilutely colored. This may be identical with C. euphorbiae Speg. (Bull. Soc. Mycol p. 108, 1893), and if so would become a synonym of C. euphorbiaecola since the former name is preoccupied by C. euphorbiae K. & S. (Jour. Mycol. V, 76, 1889.) On leaves of Euphorbia, Auburn, Aug. 16, 1892 (Richards).

Cercospora moricola Cke. Forming brownish orbicular spots with a pale indefinite border. In age the center of the spots is dirty white and in moist weather the conidia are very abundant giving a light pinkish or roseate tint in mass. Hyphae hyhpopyllous, very short, sometimes scarcely projecting above the substratum, hyaline or olivaceous. Conidia hyaline falcate or rarely straight or flexuous, 30–70 x 3.5–5μ, terete, 3–6-septate. Agrees with Rav. F. Am. 587; near Septogloeum and possibly identical with Phloeospora mori (Lev.) Sacc. Sometimes spots are confluent and irregular in older leaves. Conidia sometimes only 20μ long mingled with others. Does not seem to differ from C. pulvinata, Sacc. & Wint. Auburn, 1321, July 22, 1890, on Morus rubra.

Cercospora sorghi E. & E. On leaves of Sorghum halapense. Montgomery, 2087, Sept. 8, 1891.

Cercospora yuccae Cke. Forming oblong or elliptical dark brown spots on leaves of Yucca. Agrees well with Choke's description, but conidia are 1–6 or more septate.

Cercospora vernoniae E. & K. Forming small greyish or greyish purple spots on leaves of Vernonia angustifolia. Auburn, Aug.

16, 1892, (Richards); 2073, V. noveboracensis, Aug, 29, 1891, (Atkinson).

Cercospora clavata (Gerard) Cke. Forming small blackish spots on leaves of Asclepias obtusifolia? Auburn, 2425, Aug. 19, 1892 (Richards).

Cercospora lycopi E. & E. Forming brownish indefinite spots on leaves of Lycopus rubellus. Auburn, 2101, Sept. 2, 1891 (Duggar).

Cercospora crotonifolia Cke. Spots suborbicular, greyish or light ochraceous with a narrow blackish or dark border. Hyphae hypophyllous, very short, from a tuberculate stroma, fuliginous. Conidia cylindrical, 20–40 x 3.5–5μ, 3-septate, hyaline. On leaves of Croton sp. Auburn, 1010, Oct. 16, 1889.

Cercospora cruciferarum E. & E. Forming dark bordered small white spots on leaves of Brassica oleracea. Auburn, 2422, Aug. 29, 1892 (Richards).

Cercospora galii E. & Holw. On leaves of Galium pilosum var. puncticulosum, 1318, Auburn, July 22, 1890; also 1230, on Galium sp.

Cercospora penstemonis E. & K. Forming small dark bordered greyish spots on leaves of Penstemon pubescens. Auburn, 2339, Apr. 27, 1892.

The remaining species of Cercospora were nearly all described in Vol. VIII of the Jour. Elisha Mitchell Sci. Soc.

Cercospora cerasella Sacc. On cultivated cherry leaves (Prunus avium). Auburn, 1968, July 13, 1891 (Newman); Gold Hill, 1835a, Sept. 1890.

Cercospora zinnae E. & M. On leaves of Zinnia multiflora. Auburn, 2156, summer, 1890.

Cercospora cercidicola Ell. On leaves of Cercis canadensis. Auburn, 2016, Aug. 7, 1891 (Duggar and Newman).

Cercospora omphakodes E. & Holw. On leaves of Phlox floridana. Auburn, 1190, June 23, 1890.

Cercospora personata (B. & C.) Ell. On leaves of Arachis hypogaea. Auburn, 2157, Sept. 7, 1891.

Cercospora occidentalis Cke. On leaves of Cassia occidentalis. Auburn 1547, and 2128, July 1890 and 91 (Duggar and Atkinson).

Cercospora diodeae Cke. On leaves of Diodea trees. Auburn, 1987, July 16, 1891 (Duggar and Newman).

Cercospora tephrosiae Atkinson. On leaves of Tephrosia hispidula. Auburn, 2105, Sept. 14, 1891.

Cercospora truncatella Atkinson. On leaves of Passiflora incarnata. Auburn, 2025, Aug. 26, 1891.

Cercospora agrostidis Atkinson. On leaves of Agrostis. Auburn, 2036, July 23, 1891 (Duggar and Newman).

Cercospora citrullina Cke. On leaves of Citrullus vulgaris. Auburn-Sept. 3, 1890.

Cercospora cucurbitae E. & E. On leaves of water melon (Lagena, ria vulgaris). Auburn, 2154, Sept. 10, 1891 (Duggar); also on leaves of "dish rag" squash (Cucurbita?) 2154a, 1890.

Cercospora pachyspora E. & E. On leaves of Peltandra alba. Auburn, 2193, Sept. 26, 1891 (Duggar).

Cercospora beticola Sacc. On leaves of cultivated sugar beet (Beta vulgaris). Auburn, Nov. 28, 1890.

Cercospora flagellaris E. & M. On leaves of Phytolacca decandra. Auburn, July 11, 1891 (Newman).

Cercospora acalyphae Pk. On leaves and stems of Acalypha caroliniana. Auburn, 1998, Aug. 6; 2102, Sept. 12, 1891 (Newman).

Cercospora polygonacea E. & E. On leaves of Polygonum dumetorum var. scandens. Auburn, 2225, Oct. 14, 1891 (Duggar).

Cercospora lobeliae K. & S. On leaves of Lobelia amoena. Auburn, 2226, Oct. 14, 1891.

Cercospora rhuina C. & E. On leaves of Rhus copallina, 1178, Auburn, June 30, 1890; 1181, R. toxicodendron (same date); 1304, R. venenata. Shorter's Station, July 16, 1890; 2014, Rhus glabra, Auburn, Aug. 7, 1891 (Duggar and Newman).

Cercospora aviculare Winter. On leaves of Polygonum sagittatum. Auburn, 2201, Oct. 1, 1891 (Duggar).

Cercospora liquidambaris C. & E. On leaves of liquidambar styraciflua. Auburn, 2227, Oct. 14, 1891.

Cercospora anthelmintica Atkinson. On leaves of Chenopodium ambrosioides var. anthelminticum. Auburn, 2037, Aug. 27, 1891 (Duggar).

Cercospora jussiaeae Atkinson. Auburn, 2159, leaves of Jussiaea leptocarpa, Sept. 2, 1891 (Duggar); 2191, J. decurrens, Sept. 29, 1891 (Atkinson).

Cercospora fusimaculans Atkinson. On leaves of Panicum dichotomum. Auburn, 2054, Aug. 15, 1891 (Duggar).

Cercospora setariae Atkinson. On leaves of Setaria glauca. Auburn, 2120, Sept. 17, 1891 (Duggar).

Cercospora asterata Atkinson. On leaves of Aster. Auburn, 2365, Nov. 25, 1891.

Cercospora richardiaecola Atkinson. On leaves of Richardia africana. Auburn, 2111, Sept. 7, 1891.

Cercospora alabamensis Atkinson. On leaves of Ipomoea purpurea. Uniontown, 1248, June 12, 1890.

Cercospora flagellifera Atkinson. On leaves of Galactia pilosa, 2180,

Auburn, Sept. 9, 1891. 2117, collected Sept. 17, 1891, by Duggar on Lespedeza?; seems to be the same species. Auburn.

Cercospora verbenaecola E. & E. This was described p. 20 Jour. Elisha Mitchell Sci. Soc., VIII, 1892, as a new species, C. papillosa. A later examination of fresh specimens does not seem to show any persistent character which will distinguish it from E. & E.'s species. On leaves of cultivated Verbena, 2376, Auburn, Dec. 24, 1891.

Cercospora hydrangeae E. & E. On leaves of cultivated Hydrangea. Auburn, 1013, 1890.

Cercospora desmodii E. & K. On leaves of Desmodium sp. Uniontown, 1241, July 12, 1890; also on cultivated Desmodium (Florida clover) Auburn.

Cercospora solanicola Atkinson. On leaves of Solanum tuberosum. Auburn, 1922, June 19, 1891.

Cercospora violae Sacc. Auburn, 1946, on leaves Viola ordorata July 25; 2372, V. cucullata Dec. 14, 1891.

Cercospora nymphacea E. & E. On leaves of Nymphea odorata. Auburn, 2160, Sept. 2, 1891 (Duggar).

Cercospora saururi E. & E. On leaves of Saurus cernuus. Shorters Station, 1303, July 16, 1890.

Cercospora rubi Sacc. On leaves of Rubus villosus? Auburn, 1130, Dec. 1889. Common, and collected at other times.

Cercospora boehmeriae Pk. On leaves of Boehmeria cylindrica. Auburn, 2321, Nov. 7, 1891; also collected at Shorters Station July 16, 1890.

Cercospora hydrocotyles E. & E. On leaves of Hydrocotyle umbellata. Shorters Station, July 16, 1890.

Cercospora mali E. & E. On leaves of Pirus malus. Gold Hill, 1890.

Cercospora elephantopodis E. & E. On leaves of Elephantopus tomentosus. Auburn, 1179, June 30, 1890.

Cercospora atramaculans E. & E. On leaves of Cassia tora. Auburn, 2129, Sept. 10, 1891.

Cercospora cruenta Sacc. On leaves of Dolichos sinensis, Auburn, 1238, July 8, 1890; Phaseolus vulgaris, 1236, July 18, 1890.

Cercospora viticola (Ces.) Sacc. Common on cultivated grape leaves. Auburn. Also on the native species of Vitis.

Cercospora petersii (B. & C.) Atkinson. On leaves of Smilax glauca. Auburn, 2375, Dec. 20, 1891; Shorters Station 1288, July 16, 1890.

Cercospora ludwigiae Atkinson. On leaves of Ludwigia alternifolia. Auburn, 2190, Sept. 29, 1891.

Cercospora d. virginianae Atkinson. On leaves of Diodea virginiana. Auburn, 2186, Sept. 26, 1891 (Duggar).

Cercospora crinospora Atkinson. On leaves of Rhyncospora glomerata. Auburn, 2034, Aug. 27, 1891.

Cercospora atramarginalis Atkinson. On leaves of Solanum nigrum? Auburn, 1359, 1890.

Cercospora tropaeoli Atkinson. On leaves of Tropaeolum. Auburn, 2110, Sept. 7, 1891.

Cercospora tesselata Atkinson. On leaves of Elusine aegyptica. Auburn, 2306, Nov. 6, 1891.

Cercospora seriata Atkinson. On leaves of Sporobolus asper. Auburn, July 24, and Aug. 7, 1891 (Duggar and Newman).

Cercospora davisii E. & E. On leaves of Melilotus alba. Uniontown, 1268, July 12, 1890.

Cercospora althaeina Sacc. On leaves of Althaea rosea. Uniontown, 1253, July 12, 1890.

Cercospora althaeina var. modiolae Atkinson. On leaves of Modiola multifida. Auburn, 1253a; 1890.

Cercospora silphii E. & E. On leaves of Silphium compositum. Auburn, 1198, June 30, 1890.

Cercospora thaspii E. & E. On leaves of Angelica hirsuta. Auburn, 1540, July 22, 1890; 2042, July 23, 1891 (Duggar and Newman).

Cercospora depazeoides (Desm.) Sacc. On leaves of Sambucus canadensis. Auburn, Sept. 9, 1890.

Cercospora sagittariae E. & K. On leaves of Sagittaria variabilis. Auburn, July 24, 1891 (Duggar and Newman).

Cercospora bolleana (Thüm) Speg. On leaves of fig (Ficus carica). Auburn 1772, Sept. 4, 1890.

Cercospora clitoriae Atkinson. On leaves of Clitoria mariana. Auburn, 2069, Aug. 29, 1891.

Cercospora effusa (B. & C.) Ellis. On leaves of Lobelia amoena. Auburn, 2214, Oct. 11, and Nov. 3, 1891.

Cercospora dolichi E. & E. On leaves of Dolichos sinensis. Uniontown, July 12, 1890.

Cercospora diospyri Thüm. On leaves of Diospyrus virginiana. Auburn, 2254, Sept. 26, 1891 (Duggar).

Cercospora sordida Sacc. On leaves of Tecoma radicans. Auburn, Sept. 26, 1891 (Duggar).

Cercospora fuscovirens Sacc. On leaves of Passiflora incarnata. Auburn, 2198, Oct. 2, 1891 (Duggar).

Cercospora jatrophae Atkinson. On leaves of Jatropha stimulosa. Auburn, 1171, July 2, 1891.

Cercospora macroguttata Atkinson. On leaves of Chrysopsis graminifolia. Auburn 2138, July 11, 1891.

Cercospora pinnulaecola Atkinson. On leaves of Cassia nictitans. Auburn, 2197, Oct 1, 1891 (Duggar).

Cercospora erythrogena Atkinson. On leaves of Rhexia mariana, 1541, July 22, 1890; R. sp. 1819, Oct. 1890; R. virginica, 2066, Aug. 29, 1891.

Cercospora rigospora Atkinson. On leaves of Solanum nigrum? Auburn, 1225, July 5, 1890.

Cercospora catenospora Atkinson. On leaves of Sambucus canadensis. Auburn, 2045, Aug. 27, 1891.

Cercospora erechtites Atkinson. On leaves of Erechtites hieracifolia; on dead parts of the leaf, also on angular spots. Auburn, 2303, Nov. 5, 1891 (Duggar).

Cercospora gossypina Cke. On leaves, bracts and cotyledons of Gossypium herbaceum. Common throughout the State. Probably conidial stage of Sphaerella gossypina Atkinson.

Cercospora liriodendri E. & Hark. On leaves of Liriodendron tulipifera. Auburn, 1951, July 11, 1891 (Newman).

Cercospora cephalanthi E. & K. On leaves of Cephalanthus occidentalis. Auburn.

Cercospora oenotherae-sinuatae Atkinson n. sp. Spots minute, with an indefinite colored border and a whitish center. Hyphae amphigenous, short, few in a tuft, spreading, 35–40 x 4–5μ, flexuous, brown, septate, ends truncate where spores are delimited. Conidia cylindrical, tetete, hyaline, 3–6–septate, 35–70 x 3.5–4μ. On leaves of Oenothera sinuata. Auburn, Sept. 4, 1890.

Cercospora muhlenbergiae Atkinson n. sp. Hyphae amphigenous, tufts scattered over the leaf, bases of the hyphae in the tuft rather closely crowded and more or less spreading above, flexuous, notched, zigzag, brown, septate, 70–140 x 3.5–4μ. Conidia hyaline, narrowly lanceolate, 1–5–septate, straight or inequilateral, 25–35 x 4–5μ. On leaves of Muhlenbergia diffusa. Auburn, Oct. 3, 1891.

Cercospora scolecotrichoides Atkinson n. sp. Hyphae fasciculate making numerous black points scattered on the light green or yellow portions of the leaves, spreading, brown, flexuous, nodulose, sometimes branched, 100–200 x 4–6μ, septate. Conidia terminal or lateral as in Cercospora when the hypha grows beyond, obclavate, fuliginous, abruptly narrowing into a long terminal portion, 3–septate, 30–50 x 8–10μ. Near Scolecotrichum graminis which it resembles in general appearance. On languid leaves of Arundinaria tecta. Auburn, Oct. 28, 1891 (Duggar).

Cercosporella persicae Sacc. On leaves of Prunus persica, forming delicate mildewed areas. Auburn, 1792, Oct. 30, 1890 (Atkinson); 2206, Oct. 1, 1891 (Duggar).

Cercosporella pycnanthemi Atkinson n. sp. Spots hypophyllous, large, angular, limited by the veins of the leaf, presenting a mildewed appearance from the numerous conidia. Upper side of the leaf marked by an indefinite pale spot. Hyphae hypophyllous, arising in large numbers from a small stroma which is light yellow.

Helminthosporium ravenelii Curt. & Berk. On inflorescence of Sporobolus indicus. 1186, Auburn, June, 1890.

Helminthosporium macrocarpum Grev. Forming velvety patches on dead twigs of Quercus. 2332, Auburn, Nov. 8, 1891.

Helminthosporium inconspicuum C. & E. On living and languid leaves of Secale cereale. . 1908, Auburn, Feb. 19, 1891.

Helminthosporium avenaceum Curt. On dead oat straw (Avena sativa) associated with Puccinia rubigo-vera and Colletotrichum lineola. Auburn, 1925, June 26, 1891.

Helminthosporium turcicum Pass. On languid leaves of Sorghum halapense, 1278, Mobile, July 24, 1890; 2178, on Cinna arundinacea, Auburn, Sept. 15, 1891; 1175b on Elymus, July 5, 1890, the latter associated with Leptosphaeria elymi and Septoria bromi.

Helminthosporium leersii Atkinson n. sp. Spots irregularly oblong, amphigenous, at first dark brown, then dirty white with dark brown border. Hyphae amphigenous, brown, irregularly nodulose or flexuous, 200–350 x 4–6μ. Conidia slightly curved, 5–9 septate, elliptical, faintly fuliginous. On leaves of Leersia virginica. Auburn, 2103, Sept. 13, 1891. Near H. turcicum but hyphae and conidia more slender.

Helminthosporium tuberosum Atkinson n. sp. Hyphae forming distinct and distant tufts, spreading, 100–300 x 10–12μ, black, septate, usually lighter colored at the apex, irregularly curved or flexuous, smooth. Conidia oblong, rarely subclavate, olivaceous, evenly colored, straight, thick walled, 4–7–septate, 50–100 x 12–14μ. Hyphae arising from a tuberous erumpent stroma, which is black outside but hyaline within and composed of small cells. On putrescent culms of Secale cereale. Auburn, 2104, Sept. 14, 1891 (Newman).

Helminthosporium flagelloideum Atkinson n. sp. Spots indefinite, black, Hyphae amphigenous, few in a cluster, stout, fuliginous brown, flexuous, nodulose, 4–8–septate, 50–120 x 7–9μ. Conidia fuliginous, base elliptical, upper end prolonged into a long hyaline slender flagellum much as in Cercospora crassa, 7–9–septate, 70–150μ. On leaves of Panicum sp. Auburn, 1906, Sept. 1890.

Heterosporium gracile (Wallr?) Sacc. Forming suborbicular light brown spots with a broad dark brown border on leaves of Iris (cultivated). Auburn, 1995, Aug. 1, 1891 (Duggar).

[illegible] intercominatum (B. & R.) Atkinson.
[illegible] sambuci Earle. Bull. Torr. Bot. Club. XXIX, [illegible]. On dead stems of herbs and shrubs, as Sambucus, Solidago, [illegible], 2166, Auburn, 1891.

Sphaerelia tripsaci Bornet (Spermoedia tripsaci M. A. Curtis). On Tripsacum dactyloides. Gallion, Sept. 20, 1894 (Duggar).

Spermoedia paspali (Schw.) Fr. On Paspalum laeve. Auburn, Sept. 14, 1891 (Duggar).

Tetraploa ellisii Cke. Forming effuse black patches on culms of Arundinaria tecta. Auburn, 2163, Sept. 19, 1891 (Duggar).

Tetraploa divergens Tracy & Earle. Forming blackish elongate patches on languid leaves of Panicum agrostoides. Auburn, 2243, Oct. 15, 1891.

Triposporium elegans Corda. On leaves of Rubus villosus, attacked by Meliola manca. Auburn, 2308a, Oct. 30, 1891.

Isaria verticillata Atkinson n. sp. Stromata scattered or in tufts, cylindrical, simple and small or branched and larger, 0.25–1 mm high by 10–35μ in diameter, everywhere sporogenous. Hyphae coalesced so that the septa occur at definite and regular and common intervals. Upper portions of segments enlarged outwards bearing conidia in compact verticels. Conidia navicular or a few ovate, 8–14 x 4–6μ, hyaline, with one large oil drop. On under side of leaves of Quercus stellata, forming white patches. Auburn, 2199, Nov. 11, 1891 (Duggar).

Stilbum versicolor Pat. On dung of a small bird, on tomato vine. Stromata gregarius, 2–3 mm long, little attenuate above, apex extending into a broad columella. Head globose, light reddish yellow, or cream colored. Conidia ovate to short oblong, minute, 2–3 x 1.5μ, faintlv glaucus. Stipe whitish to very faintly yellow. In Patouillard's plant the heads are first greenish, then reddish brown, spores spherical. Otherwise it is identical and these differances do not seem sufficient to separate it. Auburn, 1571, Aug. 14, 1890.

Stilbum arcticum Berk.? On dead Stereum versicolor. Auburn.

Stysanus stemonites (Pers.) Corda. . On decaying rose leaves. Auburn, June, 1890.

TUBERCULARIEAE.

Fusarium solani (Mart.) Sacc. On dead tubers of Solanum tuberosum. Athens, 1890 (Newman).

[illegible]sarium vasinfectum Atkinson. In vascular ducts of stems of Gossypium herbaceum, Mathews, Hope Hull, Selma, etc.; Abelmoschus esculentus, Athens, 1891.

Fusarium oxysporum Schlecht. On bolls of Gossypium herbaceum and bark of Melia azedarach. Common.

Fusarium oxysporum Schlecht **var. lycopersici** Sacc. On internal portions of fruit of Lycopersicum (tomato). Auburn, 1890.

Fusarium ustilaginis K. & S. On Ustilago avenue. Auburn, 1891.

Fusarium roseum Link. On staminate aments of Alnus. Auburn, 1082, Jan. 1890.

Fusarium graminum Corda. In seeds and glumes of living Paspalum digitatum forming prominent roseate or scarlet masses. Auburn, 1821, Nov. 1890.

Microcera coccophila Desm. On coccids? on living branches of Quercus aquatica. Auburn, Nov. 12, 1891.

Epicoccum neglectum Desm. On dead leaves of Avena sativa and other hosts. Often with Cladosporium herbarum. Auburn.

Epicoccum vulgare Corda. On dead portions of leaves of Elymus. Auburn, 1175e, July 5, 1890. With Leptosphaeria elymi, etc.

Cerebella paspali Cke. On glumes of paspalum platycaule. Auburn, 2091, Aug. 1891.

Spegazzinia tricophila Atkinson n. sp. Sporodochia not distinct, spores crowded or scattered ; mycelium creeping over trichomes of Rubus villosus, hyaline. Fertile hyphae short, slender, erect, 20–25 x 3μ, hyaline, terminating in an expanded cuboid club, which is four lobed, this making the conidium. Normal conidia more or less quadrate, brown, deeply constricted laterally to a central piece, 15–20μ in diameter, lobes echinulate. Auburn, 2308b, on leaves of Rubus villosus, accompanying Meliola manca.

Volutella setosa (Grev.) Berk. On dead stems of various plants. Auburn 2384, 1891.

Volutella tectaecola Atkinson n. sp. Spots large, light brown, affecting large areas of end or margins of leaves, or in oblong areas, limited from the green portions of the leaves by a purple brown border. Sporodochia minute, thickly scattered, black, 35–70μ in diameter, elevated 25–40μ above the surface, bordered by black stiff setae, 40–70 x 4–5μ. Conidia cylindrical, straight or sometimes curved, ends sharp pointed, hyaline, continuous ; basidia crowded. On leaves of Arundinaria tecta. Auburn, 2050, Aug. 15, 1891. Near Colletotrichum. (Duggár).

Volutella acalyphae Atkinson. Sporodochia black, erumpent, 80–100μ in diameter, setae black, strongly septate, irregular, 150–210 x 4–7μ, sometimes strangulate and breaking off. Conidia hyaline, falcate, fusoid, continuous, 25–30 x 2.5–3μ ; smaller and probably younger ones 10–15 x 2μ, straight ; basidia slender, 35–50 x 1.5–2μ, hyaline. Auburn, 2158, on stems of Acalypha caroliniana, Sept. 12, 1891 (Newman).

Volutella oxyspora Atkinson n. sp. Sporodochia large about 200 μ, in diameter, hemispherical, black; setae black, pointed, 100–150 x 4–5 μ, divergent. Conidia falcate, fusoid, hyaline, continuous, 25–30 x 2.5–3 μ; basidia short from a fuliginous stroma, pale fuscous. On decaying cultivated beet. Auburn, Dec. 1890.

Frankia alni (Wor.) Atkinson. Forming galls on roots of Alnus. Feb. 1892.

Frankia ceanothi Atkinson. Forming galls on roots of Ceanothus americanus. Auburn, 2347, Nov. 1891.

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